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Educational News and Editorial Comment

PARTISAN OR NON-PARTISAN CIVICS

A newspaper report of a meeting of the American Federation of Labor calls attention to an important question which is sure to be discussed from many points of view in coming years. The item is as follows:

Atlantic City, N.J., Aug. 24.—The American Federation of Labor intends to take a leading part in the development of the nation's public school system and to see that labor's point of view is accurately expounded in school textbooks, the federation executive council announced tonight.

The council, in a statement made public by President Samuel Gompers, said there "appears to be evidence of a preconcerted and well organized effort to shape the thoughts of the young through the preparation of textbooks used, and that there is a total absence of labor's viewpoint," but instead a "false conception of existing theories of industrial, political and social economics."

The council's action comes as a result of a report made to the most recent convention of the federation. Then it was charged an "apparently well organized and systematic campaign has been undertaken by the National Association of Manufacturers to conduct a propaganda in the schools of the country in furtherance of so-called 'open shop.'"

"Letters and pamphlets have been sent to teachers of economics in the colleges, universities, and schools by the manufacturers' association, supplemented by textbooks containing subjects for debate, all of which are intended to prejudice and mislead those attending our schools and to inculcate the spirit of hostility to the labor movement."

The danger suggested by this item is that the effort to correct our present deficiency in civics instruction may be dominated by partisan interests. One reason why community matters have not been fully treated in our school program is that they involve such intense personal prejudices that it is extraordinarily difficult to teach them without distorting in one direction or another the facts which children ought to know.

If labor is to have its special hearing in the schools, why should not capital have its voice also? Or should not those who hold the single-tax theory be given an opportunity to present their case? The same might be urged for the socialists and others whose political views are of extreme types. One can readily see that a body of teachers untrained in the technicalities of social science would soon be overwhelmed in the effort to guide the thinking of their pupils through series of partisan discussions of the type suggested in these questions.

On the other hand, there can be no doubt that the labor party is right in asserting that the schools have been deficient up to this time in the discussion of political and social problems. Everybody connected with the schools and with the social sciences seems to be aware of the problem, and numerous efforts are being made to solve this problem. What seems to be lacking in these efforts is anything like genuine co-operation. The historians have their mind about what ought to be done and are peculiarly tenacious in their position. They are already intrenched in the schools and they are quite unwilling to give up their dominant control of the field. The geographers are fully convinced that they can deal with the problem of man's relation to the earth and all of the extracted industries. The teachers of literature hold themselves to be the guardians of the ideals of the nation and the race. Nobody seems to know exactly how to introduce a new subject which shall deal with the intricate problems of modern social life and join the various interests that have been divided among different departments.

It is high time that school people recognize the fundamental fact that society is calling for a new type of teaching in the schools. A comprehensive teaching of civic problems will have to be intro-

duced. The teachers, as public servants of large intelligence and broad training, ought to be in a position to formulate the material necessary for such teaching, but since they do not formulate it with either speed or united success, partisan interests are beginning to assert their right to take charge of the school program.

The item quoted is, therefore, a warning and a challenge to the educational profession. If we do not deal with this problem, somebody is going to do it for us.

STANDARDIZATION OF SCHOOL BUILDINGS

In a paper presented before the National Association of School Accountants, Mr. Ittner, the well-known school architect, makes a vigorous attack on the efforts of certain recent writers to devise methods for scoring school buildings. He reproduces certain proposed plans which would be favored by the scoring schemes under criticism because they reduce to a minimum the space devoted to corridors. He then points out the fallacy of scoring such buildings high by showing that the absence of corridors renders circulation through the building very difficult and general administration of the pupils unsatisfactory.

After showing that the scoring proposed is not a safe method of determining what should go into a building, Mr. Ittner lays down a number of principles which should guide in the planning of a school building.

> The meaning of school building efficiency is maximum return on investment—in service. The greatest factor of all in schoolhouse planning is the skilful adaptation of enriched school facilities to the enriched and expanded modern school life. The ability of the plan to serve the educational program is the most important thing. This requires a combination of architectural ability and educational engineering so that instructional waste space may be eliminated by maximum use and non-instructional waste space reduced to a minimum.
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> It is not possible to measure the efficiency of school buildings except in terms of service. Surely then we need some other method far more comprehensive and complete than the standard chart and candle of efficiency to bring out the real and fundamental merits of a school building plan—a method whereby the relative excellence of buildings may be readily recognized.
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> Perhaps the principal causes of inadequate and unsuccessful buildings are:
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> 1. The selection of incompetent schoolhouse planners—architects who have very little knowledge of educational tendencies and consequently are unable to make intelligent surveys of local situations.

2. The lack of unification of the educational plan and building plan. The educational program must always be developed first and serve as the beacon light and constant guide in the development of the building plan.

3. The lack of sufficient foresight in developing plans for building programs. Altogether too many school communities in the country are limited now in educational opportunities because of the patch-work and piece-meal methods of school building in the past. A forecast of from five to ten years is advisable when developing a comprehensive school building program.

4. Lack of attention to such matters as adequate lighting, ventilation, maximum safety, circulation, conservation of space, and provision for expansion.

5. Non-instructional waste-space. This is mentioned last because if the first four weaknesses are remedied, waste space will automatically disappear. The educational facilities would naturally be the most important factors to measure—whether or not they are adequate, well-proportioned, properly grouped and placed; next, the status of the plan with regard to safety, lighting, and aesthetic fitness, and third, the rating of its elasticity, ease of pupil circulation, and conservation of space.

Buildings will need to be classified as to size and type, also into elementary and secondary groups. Then an agreement determining the definite standards by which the various component parts of a school building may be analyzed and judged may be necessary. This may be accomplished by a division into ten general classifications:

1. The adaptability of the plan in meeting educational requirement.

2. Safety. This should cover such matters as height, corridors, stairways, exits, and construction.

3. Lighting and ventilation.

4. Administration and accessory rooms, their area, location, and arrangement.

5. Auditoriums, their size, location, and interior arrangement.

6. Physical education quarters, their size and grouping, their accessory rooms, and correlation with out-of-door recreational facilities.

7. Classrooms, their size and distribution.

8. Laboratory classrooms, their size and grouping.

9. Pre-vocational and vocational quarters, their variety, size, grouping, and location.

10. Site and architecture.

The foregoing constitute the most important items to consider when measuring the efficiency of school buildings. All of them, except perhaps No. 1, are capable of reduction to certain minimum standards to which they must attain to be considered as fulfilling modern school requirements, and the ability with which they measured up to the last nine requirements would determine largely the merit of the plan in meeting requirement No. 1.

There would be no difficulty then, after definite standards had been agreed upon, to measure the component parts of a given building and determine how

closely they measured up to such standards. A certain number of points could be allowed for each classification, 1 to 10. The individual ratings could then be totaled, divided by the number of items, and the final result would represent the efficiency measurement in terms of service and upon the basis of 100 per cent.

This series of suggestions is of interest to the student of education, as well as to the school administrator. They turn what looks at first like an attack on the movement toward standardization into the strongest kind of support for the movement. False standards, whether they result from a narrow conception of what should go into a building or from an overinsistence on uniformity, will certainly defeat the movement. The way to avoid false standards is to make the kind of analysis that Mr. Ittner has suggested and thus lay a broad and true foundation for the scientific study of building construction.

VOCATIONAL INFORMATION FOR WOMEN

There is a Bureau of Vocational Information located at 2 West Forty-third Street, New York City, which is issuing monographs dealing with the opportunities open to women. The publications of this organization will be very helpful to deans of girls in high schools and will make very wholesome reading for the girls.

The *Smith College Alumnae Quarterly* contained in a recent issue an article by Miss Emma P. Hirth setting forth the purposes and mode of organization of this Bureau. The following quotation is taken from this article:

> Among the reasons for the slow advancement of women along vocational and professional lines, for their marked conservatism in departing from well-beaten traditional tracks, and for their acceptance, year after year, of uncongenial, unsatisfying work must be counted their ignorance of the fields which lie just beyond the woods.
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> No woman is likely to choose a field of work of which she has never heard; no woman can choose intelligently a field of work of which she knows very little. With the increase in the number of women entering vocational and professional pursuits of many sorts must come an improvement in the method of choosing their work so that the wasteful method of haphazard choice, of try and fail and shift and change, may give place to a less wasteful method and one which will more surely give women the opportunity to use their trained abilities in the way that will mean the fullest satisfaction to themselves and the best possible service to society.

It is generally agreed, I suppose, that it is very much more difficult for a woman than it is for a man to accumulate the kind of information about occupations which is absolutely essential for a wise selection of a life work. For boys, their earliest contacts help to supply it, and all through their period of education and training they exist in an atmosphere filled with helpful influences of this sort. It is not so with most women. They are encouraged to think in general terms of a remote, hazy future which will take care of itself when it arrives, and the result is often a hasty, last-minute decision about work based on superficial reasons or none at all.

In view of the great amount of ignorance which still exists in regard to the status of women's work and in view of the handicaps under which women are laboring in the business and professional worlds and of the changes which their work is constantly undergoing, considering also the needs of students still in college but with their eyes turned to the future, and considering the questions which the colleges themselves are asking about some of the relations between education and work, there is small wonder that the Bureau of Vocational Information has almost unlimited opportunities for usefulness.

It is conducting investigations into vocations and professions for women so as to secure for each field of work definite and authoritative data regarding the training necessary and desirable and where such training may be had; the personal qualifications required; the best methods of entering; the kinds of positions and the duties involved; the conditions of work and the salary ranges, and the ultimate opportunities to which beginning positions may lead. The results of these studies are published and distributed widely among women and are sent into the schools and colleges in all parts of the country. During the year just ended the Bureau has made four intensive studies covering "Women in the Law," "Women in Chemistry," "Positions of Responsibility in Department Store Organizations," and "Women in Statistical Work." In addition to these major surveys developments in all fields of work for women are carefully observed and recorded. The Bureau co-operates with the appointment secretaries, deans, and vocational committees in the colleges, supplying them at their request with specific data concerning current developments in fields of work in which their students or graduates may be interested. It assists in the planning of vocational conferences, and members of the staff visit both colleges and schools on invitation. It co-operates with all the occupational bureaus for women and serves as a center of vocational information for a number of organizations and associations of women.

COURSES FOR TALENTED PEOPLE

There has been a great deal of discussion in recent years of the proper methods to be adopted in fitting the school curriculum to individual pupils, especially those of superior ability. The college curriculum has also been very much enriched and diversified in the

effort to give the best possible training to all comers. In spite of all these movements, however, there has been a certain rigidity about academic requirements which has not yielded readily to suggestions of relaxation.

The New York alumni of the University of Wisconsin have asked that a unique experiment be tried. The announcement of their proposal in the *New York Times* is as follows:

An experiment in scholarships designed to meet the needs of the student who has exceptional capacity in a special field but who may be deficient in other fields has been undertaken by the University of Wisconsin.

The New York City branch of the Alumni Association of the University of Wisconsin has established an annual scholarship of the value of $700, to be known as the Zona Gale Scholarship—named in honor of a graduate of the university—to be awarded to a student who has shown that he possesses special talent of an unusually high order and who wishes to spend all his time in the university in pursuing courses which he thinks will develop his special talent without being required to complete studies in which he has little or no interest. The holder of the scholarship will not be required to satisfy the regular entrance requirements if he is deficient therein.

To obtain this scholarship a student need not have completed the usual high-school course of study, provided that he has given adequate proof, first, of the possession of exceptional talent in a particular field, and, second, that he can perfect his talent by spending a period at the university in the pursuit of studies of his own choosing. Such a student will not be a candidate for a university degree, which always represents the completion of certain prescribed studies. A committee of the university faculty will administer this scholarship, and the members of the committee will keep a sympathetic eye on the student and note whether he is deriving benefit from his residence in the university. So long as he is making progress in the development of his special talents he will be given complete freedom to follow any program which he thinks will be of greatest advantage to him.

This scholarship is open to any person in any part of the country who has given evidence of exceptional creative ability in any field of human interest and activity. Nominations for the scholarship may be made to the registrar of the university by superintendents or principals of schools, by teachers, or by anyone else. To receive consideration the nomination must be accompanied by evidence that the candidate possesses unusually original talent and that he would be able to utilize the advantages offered by the university for the development of his talent. There are no restrictions in respect to age, sex, or race.

"This scholarship is in keeping with the traditions and aims of the University of Wisconsin, which extends a welcoming hand to every individual who can properly utilize its facilities for intellectual, social, ethical, or vocational

development," declares the representative of the university. "It is thought that this experiment may yield some evidence showing whether it is desirable to modify the usual college requirements for persons of special talent of an exceptionally high order. The committee will make reports to the Wisconsin Alumni Association of New York City regarding the outcome of the experiment.

"Anyone who will spend a few minutes glancing through a biographical dictionary will hardly fail to note instances of distinguished men and women who were misfits in college. Some of the leaders in every department of human activity were either unable to enter college because they could not satisfy entrance requirements or, having been admitted, were not allowed to remain because of deficiency in certain prescribed studies. There are complaints in autobiographical sketches of the lack of elasticity in college courses, which has resulted in the exclusion of persons who possessed unusual talent in particular fields but who were unable to complete, or who were not interested in, some of the required work."

It is not easy to foresee what will be the consequence of an experiment of this type. What, for example, will be the effect of this kind of admission to college on the average high-school pupil? What will be the effect on college students who have been led to believe that a regular college course and a regular college degree are worth the necessary effort because society has stamped them with its approval based on long experience? What will be the verdict of society on college work in general, if it is seriously urged that the rolls of leadership in American life are full of the names of those who have never submitted themselves to the strenuous labors of a regular course?

The experiment launched by the Wisconsin alumni suggests that there is a demand for liberality in the management of college studies. There is a question whether the effects of so radical a move will be helpful.

FRATERNITIES IN THE HIGH SCHOOLS OF WASHINGTON, D.C.

Washington has passed through the same stages in the effort to abolish high-school secret societies that have been experienced in many other cities. After long debate the Board of Education voted in 1916 to impose a penalty of expulsion on students who were found to be members of such organizations. In spite of this legislation fraternities and sororities continued to exist. Parents and students felt them to be fully justified and were ready to defy the Board and its officers.

Superintendent Ballou has devised a method of dealing with the situation which is radically different from that adopted by the Board in 1916. The new method is embodied in the following set of rules:

1. That after June 1, 1921, membership on the part of any junior high school or high-school pupil in any association, organization, club, fraternity, or sorority which has not been approved by the Superintendent of Schools is forbidden.

2. That an association, organization, club, fraternity, or sorority which enrolls in its membership pupils of a junior high school or high school shall submit to the Superintendent of Schools such information as he may require regarding its constitution, by-laws, membership, eligibility requirements for membership, time and place of meetings, programs of meetings, and any necessary information, as a basis for the Superintendent's approval or disapproval of said organization.

3. That all associations, organizations, clubs, fraternities, or sororities which may hereafter be approved by the Superintendent of Schools shall be placed under the official supervision of the faculties of the several junior high schools and high schools.

4. That any pupil who, after June 1, 1921, joins, or after October 1, 1921, has not discontinued his membership in any association, organization, club, fraternity, or sorority which has not been approved by the Superintendent of Schools shall thereby disqualify himself or herself: (1) From holding a commission or warrant in the High School Cadet Brigade. (2) From holding any position, either elective or appointive, on any school publication. (3) From representing his school on any team in competitive athletics, rifle matches, interscholastic debates, or dramatic performances. (4) From being certified as eligible to stand for election to any class office. (5) From holding any position in a high-school bank. (6) From holding any office in any organization, club, or activity which comes under the direction of the school. (7) From receiving any form of honors, other than those awarded for scholarship attainments. (8) From holding any position as representative of his school.

5. That, after September 1, 1921, and at the beginning of each semester or more frequently if required, each pupil in a junior high school or high school shall be required to furnish the principal of the school with a signed statement, countersigned by one of his or her parents or his or her guardian, indicating the associations, organizations, fraternity, or sorority of which he or she is a member.

It is not the purpose of this regulation to debar a pupil from securing a high-school education, but it is the intention of the above provisions to exclude from representative honors pupils who continue to be members of organizations which exist contrary to the regulations of the Board of Education.

Amendment to Rule 4—The provisions of Rule 4 shall not apply to members of the senior class in good standing of the school year beginning September, 1921, even though they were on or before May 1, 1921, members of an organization not approved by the school authorities.

HANDBOOK FOR HIGH-SCHOOL STUDENTS

The high school of Ann Arbor, Michigan, issues a handbook for the use of its students. Perhaps the practice of the University of Michigan suggested the preparation of this book. At all events, it must be a very attractive inducement to the students of that school to try to understand the institution which they attend.

The book contains the school calendar for the year. Then follows a chapter on this particular high school as an institution, giving a brief history of the school, a list of the teaching and administering staff, and miscellaneous information including a section on customs and usages.

Part II gives information on rules and regulations; Part III, on enrolment and classification; Part IV, on credits and curriculum; Part V, on departments and courses of instruction; Part VI, on student activities. There is appended to the descriptive sections a list of the textbooks and a full index which makes it possible for the student to turn readily to any item he may need.

Such a book will do more to build up school spirit of the right kind and to keep the school running smoothly than much disciplining and reiteration of laws and orders. It treats the student as an intelligent member of a well-organized community and helps him to find his place quickly in a complex and very often confusing environment.

The principal's foreword is as follows:

> This book is presented in the conviction that it will prove highly valuable to a great many people. Teachers will find in it the answer to many a question that has heretofore been obscure. Students will find in it a safe guide in the choice of studies and a fund of other information which they cannot fail to prize most highly. Parents and supporters of the school will learn from it how complex and varied are the activities and interests of a large modern high school. It should arouse in all a deeper interest in this splendid school and serve to bring about an even greater unity of spirit and loyalty among teachers, students, and patrons. If these hopes are realized, the many hours spent in the preparation of this little book will be regarded as time well spent.

Two passages from later sections may be quoted to show the kind of spirit which the book aims to cultivate.

Ann Arbor High School still retains the substantial characteristics for which it has always been noted. It is progressive, but safely so; it insists on high standards of scholarship and conduct, but this is done in the conviction that such qualities were never more needed than today. Clean living, clear thinking, high purposes in life, are the objects sought. The general activities of the school—about the building, on the playground, in the gymnasium, at social functions, as well as in the classrooms—give opportunity for the development of these qualities. For this reason all these matters are considered the concern of the school and have careful supervision. Emphasis is everywhere placed on character.

"The Ann Arbor High School is aiming high. But its real value? We all of us plan for great things and expect to be presidents, or millionaires at least, but what are we? We are never more than we ourselves make ourselves. And this school, for all its high aims, will be of no value to any student unless he makes it so.

"There is gold in the ground that has been there for thousands of years, unfound. There are diamonds still waiting to be discovered. But of what use are they to man? None at all until he finds them and uses them. Just so with one's high-school life. Good teachers, interesting, if sometimes hard, subjects, pleasant times; all these will be as nothing unless each makes them worth while for himself."

—Augusta Avery, '21.

Football is the most popular athletic game supported by the Ann Arbor High School. It is a game that instills loyalty and school spirit in the students. All home games are well attended by a large and enthusiastic crowd of students and townspeople. The sport, besides aiding individuals physically, makes for team work and a spirit of good sportsmanship among the players. It teaches alertness and self-control under trying circumstances and challenges the courage of the individual player. The team is truly representative, for every year finds members of the four classes playing on it. In the past two years our team has been a strong contender for the state title.

In the last two years, interclass football has been promoted for the purpose of developing material for the school team and to give every one an opportunity to play the game, if he so desired. Enthusiasm has run high in the interclass games, and all have been hotly contested. The class winning the championship is presented with the football trophy for one year, while the members of the team receive small bronze medals.

It is of interest to know that Ann Arbor was the first high school in the state of Michigan, and possibly the first in the middle west, to play the game of football. The first game was played in the fall of 1884 between two class teams of this school.

News Items from the School of Education of the University of Chicago

CHANGE OF PRINCIPAL IN THE UNIVERSITY HIGH SCHOOL

Mr. Morton Snyder, for two years principal of the University High School, has accepted the position of headmaster of the Park School, Baltimore, Maryland. This is one of the newer private day schools of the East. It is being developed along distinctly progressive lines, with emphasis on modern technique in instruction and school administration. The school, which enjoys the advantage of an up-to-date plant with twenty acres of school ground, has about three hundred pupils, from the kindergarten through the high school.

Mr. William C. Reavis, superintendent of schools, Alton, Illinois, has been engaged as principal of the University High School. Mr. Reavis took a bachelor's degree in the University of Chicago in 1908, a master's degree in 1911, and is well advanced toward the doctor's degree. He has had wide experience in public-school administration and supervision, which prepares him admirably for the principalship of the University High School. He served for four years as superintendent of schools and principal of the high school in Oakland City, Indiana. He was then principal of several elementary schools in St. Louis, where his work, particularly in the Laclede School, attracted wide attention. While in St. Louis he served as an instructor in Harris Teachers College, giving courses in educational sociology and psychology. During the last two years he has been superintendent of schools at Alton, Illinois. In addition to his duties as principal of the University High School, Mr. Reavis will give courses in the College of Education on the administration and supervision of high schools.

RECOMMENDATIONS OF ENGLISH DEPARTMENTS IN HIGH SCHOOLS RELATING TO GEOGRAPHICAL AND HISTORICAL READING

One of the aims of reading in high schools as set forth in the bulletin on the reorganization of English in secondary schools is

the giving of geographical and historical information. As a step toward finding out just what geographical and historical material is given to the pupil through reading, Hazel E. Kock, A. M., recently made a study of the content of the books most frequently recommended by the high schools of the country. Lists of books read intensively in class and lists of books for outside reading were gathered from thirty-four high schools. The books recommended by the Committee on Reorganization were included. A total of 4,025 different books was found on the thirty-five lists, with books mentioned all the way from one to twenty-eight times.

An analysis of these books showed the following facts: The geography of the United States, England, and Scotland is as adequately revealed as is possible in literature. The geography of France and Canada is presented only fairly well. Greece, Italy, Russia, Sweden and Norway, Spain, Palestine, and India are revealed to some extent, but they need more frequent mention to insure adequate discussion. Other parts of the world receive inadequate treatment. The history of the United States and England in the eighteenth and nineteenth centuries is well revealed. The history of France and Germany is covered in an incidental way from the time of Christ to the present. The history of Ancient Greece and Rome during the period of their supremacy is adequately presented. Personal, family, and group life in the countries touched upon is well revealed, and, with two exceptions, the dramatic crises of Europe are adequately described. History of civilizations other than those of the Western World is not discussed at all.

This study is merely an initial step in the direction of making a proper correlation between the objectives of reading and the materials recommended for class and library use.

A SURVEY OF THE TEACHING OF HOME ECONOMICS IN THE PUBLIC SECONDARY SCHOOLS OF CALIFORNIA

AGNES FAY MORGAN
University of California

An attempt was made in the spring of 1920 by the Household Science Department of the University of California to obtain some information concerning the status of the teaching of home economics in the high schools and intermediate schools of California. Necessarily, this inquiry was carried out largely by correspondence, although several of the larger schools were visited by members of the department.

The specific purpose of the study was the determination of (*a*) the types of teachers giving instruction in home economics in these schools and (*b*) the types and number of courses offered under this name.

What seemed a suitably brief and unambiguous form of questionnaire was made out. Copies were sent with a letter to at least one teacher of home economics in each of the 249 high schools and intermediate schools listed in the directory of secondary schools issued by the state Board of Education in November, 1919, as offering home economics courses. One hundred and eighty-six questionnaires were returned, representing practically 75 per cent of the schools and including all of the larger systems except those of San Diego, Sacramento, Fullerton, and Glendale.

The questionnaire contained twelve questions, eleven of which required in answer simple statements of fact. Since the twelfth question involved only an expression of opinion by the teacher as to the attitude of the community toward the home economics work, the returns were found to be valueless and have been discarded. The first eleven questions, together with a summary and interpretation of the answers received, will be presented in order.

1. What home economics courses are given in your elementary schools? (This was an effort to discover any continuity which might exist in the courses through the elementary and secondary grades.) One hundred and sixty-nine answers to this question were received. According to the returns, some instruction in sewing is offered in the upper grades of 68 per cent of the schools represented; in 52 per cent cooking is also offered. No correlation with high-school work or instruction in subjects other than cooking and sewing is mentioned.

There appears to be a well-defined tendency toward the introduction of cooking and sewing into the curriculum of the upper grades of the elementary school. Especially is this true of sewing, which is reported in about one-third more cases than cooking. About one-fourth of the teachers answering report no grade-school work in these subjects. Of course, it is realized that these inquiries were addressed to the high-school teachers and that their answers with regard to this phase of the study are probably less accurate and less complete than those with regard to their own courses.

No reference was made in any of the answers to a possible correlation between the elementary and secondary courses, and, indeed, in a number of cases all knowledge of the grade-school situation was disclaimed.

2. What home economics courses are given in your high school? Answers were received from 186 persons, each representing a different school. The kinds of courses offered and the frequency with which each occurs are shown in Table I.

A number of terms other than cooking and sewing were used, although in the classification here given these were considered to mean chiefly cooking and sewing. It is probable that in many cases courses designated by these terms may include other content than that ordinarily thought of under the names of cooking and sewing. A little so-called nutrition or dietetics is usually given in connection with the foods courses, and something of textile testing and economics or taste development in the sewing courses. In the main, however, the impression gained is that routine recipe work with some meal preparation and the making of simple garments constitute the greater part of the high-school instruction in home economics.

The total number of separate courses designated by some other title than those taken to signify cooking and sewing chiefly is only 75, as compared with 339 in which these terms are used. In the light of the prevalence of instruction in cooking and sewing in the upper grades of the elementary schools as revealed in the answers to question one, this condition in the high schools represents a grave amount of repetition in these courses. One of the distressing results of such repetition is lack of interest in, and respect for, the present courses as given in the high schools.

TABLE I

TYPES OF HOME ECONOMICS COURSES AND THEIR FREQUENCY OF OCCURRENCE

	Number of Schools	
a) Cooking and Sewing:		
Cooking courses, one to three years	166	
Sewing courses, one to four years	160	
Combined cooking and sewing courses	12	
	Included in Another Course	**Separate Course**
b) Subjects other than cooking and sewing:		
House management	17	13
Dietetics	3	10
Hygiene, first aid, and home nursing	3	14
Cafeteria cookery	8	0
Dressmaking	2	10
Millinery	24	15
Costume design	3	6
Interior decoration, house furnishing and planning	9	2
Weaving, basketry, crafts	3	3
Budget-making	0	2
Textiles	8	0
Laundry	1	0

3. Are there any prerequisites for the high-school work? If so, what are they? The number of answers received was 173.

There are no prerequisites in 80 per cent of the schools reporting. A certain school standing is required for the foods work in eight cases and for clothing work in four cases. Science courses are advised or required for the foods courses in nineteen cases and freehand drawing for the clothing work in two cases. There is indicated nearly complete isolation of the home economics high-

school work from the elementary-school work in its own field, and from high-school courses in related fields. It is likely that individual teachers effect a less detached relation than this, but the rank and file are apparently unimpressed by the need for articulation. Possibly that fear of prescription of anything in connection with high-school courses which is so characteristic of most secondary curricula makes this condition no more an indictment of home economics than of most other departments.

4. What is the average size of class? Replies were received from 164 schools. The sewing classes where separately specified are somewhat larger than the cooking classes. The majority of all classes are from ten to sixteen in number. No overcrowding is indicated.

5. What length is the period for the home economics classes? This question was answered for all the schools reporting. In most of the answers, nothing was said as to the frequency of the lessons, and it is therefore assumed that the classes meet every day as is the usual high-school custom. In fourteen cases, however, it was specified that the classes meet only two or three times a week.

The favorite length of period is eighty to ninety minutes, evidently a "double period." With judicious planning, single recitation or laboratory periods have in some cases been found satisfactory and economical for both the foods and clothing work. Superior organizing power and industry are required of the teacher to make the shorter period effective. The resulting greater simplicity and flexibility of schedule under this plan usually tend toward a larger enrolment in these classes.

6. What textbooks do you use? One hundred and eighty-one teachers answered this question. The various texts reported and the extent to which each one is used are shown in Table II. It will be noted that three books, Greer's *Textbook of Cooking* and the two Kinne and Cooley books, are mentioned 159 times out of a total of 224 times that any titles at all are given.

It is interesting to note in the suggestive and constructive monograph on *Home Economics in American Schools*,[1] recently

[1] *Home Economics in American Schools*. "Supplementary Educational Monographs," Vol. II, No. 6. Chicago: Department of Education, University of Chicago, 1920. Pp. xii+122. $1.25.

published by the Department of Education of the University of Chicago, that nine books on food and ten on clothing were found to constitute 95 per cent of all textbooks used in the one hundred and sixty-seven cities in forty-one states from which answers to questionnaires similar to that used in this study were received. The Chicago investigators report 100 per cent of the high schools as

TABLE II

THE VARIOUS TEXTBOOKS IN USE IN HOME ECONOMICS COURSES IN 181 SECONDARY SCHOOLS AND THE FREQUENCY WITH WHICH EACH IS REPORTED

Textbook	Number of Schools
None	31
Greer, Carlotta, *Textbook of Cooking*	92
Kinne, Helen, and Cooley, A. M., *Foods and Household Management*	28
Matteson, Emma B., and Newlands, E. M., *A Laboratory Manual of Foods and Cookery*	6
Wellman, Mabel T., *Food Study*	5
Campbell, Matilda, *Textbook of Domestic Science*	5
Rose, Mary S., *Feeding the Family*	4
Bailey, Pearl L., *Domestic Science—Principles and Application*	4
Farmer, Fannie M., *Boston Cooking School Cook Book*	4
Forster, Edith Hall, and Weigley, Mildred, *Foods and Sanitation*	3
Conley, Emma, *Principles of Cooking*	3
Pirie, Emma E., *The Science of Home Making*	3
Morris, Josephine, *Household Science and Arts*	8*
American Red Cross, *Home Care of the Sick*	5
Other books on foods, 1 each	8
Kinne, Helen, and Cooley, A. M., *Shelter and Clothing*	39
McGowan, Ellen B., and Waite, C. A., *Textiles and Clothing*	3
Baldt, Laura I., *Clothing for Women*	2
Gibbs, C., *Household Textiles*	1
Fales, J., *Dressmaking*	1

*In elementary schools.

using textbooks or basic references. This is in contrast with the 80 per cent found in the present study. It is somewhat striking that the California returns mention only five books on clothing and textiles but twenty-one books on food. Only one book, that by Morris, is specifically mentioned as confined to use in the elementary schools.

The state textbook law providing that a textbook once adopted must be retained for four years, and the increasing tendency toward purchase of textbooks by the high schools serve to keep in use books once adopted. In view of this fact, special care should be exercised in the selection of textbooks to be adopted in any subject so new and unstandardized as home economics.

7. What number of rooms do you have? How arranged? One hundred and eighty answers were received.

The majority of the schools, 75 per cent, provide from one to three rooms in the high-school building for the home economics classes. These consist usually of the kitchen laboratory with table desks, pantry, dining room, and a sewing room with a small fitting room. Not many of the teachers complained of the space provided, since new buildings seem to be planned in those cases where present conditions are unsatisfactory. A relatively small number of schools, thirteen, provide a so-called model apartment or house. In most cases, these apartments seemed of rather perfunctory importance in the teacher's scheme of instruction. On the whole, the physical equipment and space provided for this work in the high schools seems fairly adequate.

8. Are there any classes in vocational home-making (Smith-Hughes) being given in your school? In your community? If so, how are they arranged for? Of the 184 replies received, 138 stated that no classes were organized under this plan. Sixty-four Smith-Hughes classes were reported. Of these, forty-five were in sewing and millinery, eight in cooking, and two in home nursing. Nineteen night-school vocational classes which were not under the Smith-Hughes Act included eleven courses in sewing and millinery and five in cooking.

It is evident that so-called Smith-Hughes classes have not been organized in any large percentage of California communities. Since their organization was begun only three years before this survey was made, it may be that this represents only a temporary condition, rather than a refusal to accept this vocational plan.

A serious criticism might well be directed at the type of work given in the classes reported. Out of 83 vocational classes, 64 of them under Smith-Hughes aid, 56 are in sewing or millinery and 13

in cooking. The sewing and millinery classes are usually organized in response to the demand by older women and girls for aid in the making of garments and hats, and often have no other outcome than the articles made while the class is in progress. The cooking classes may offer something more permanent, if only in the shape of a collection of recipe cards or a cookbook. The futile character of this type of instruction is only beginning to be appreciated; and it is earnestly to be desired that outlines of courses, textbooks, problems, and illustrative material dealing with the more fundamental phases of home economics be prepared and distributed among the schools offering vocational courses. Consumer's intelligence as needed in purchasing, standards of taste in choice of clothing and house furnishings, and the principles of nutrition and child hygiene are a few of the most obvious of these neglected subjects.

9. Is there a cafeteria or lunchroom in your school? What connection, if any, has your department with it? Ninety-seven of the 171 schools represented in the returns for this question report no cafeteria or lunchroom. An analysis of the reports of the seventy-four schools maintaining lunchrooms is presented in Table III. A surprising proportion of the schools apparently make no

TABLE III

RELATION OF HOME ECONOMICS DEPARTMENT AND SCHOOL LUNCHROOM AS OPERATED IN SEVENTY-FOUR SECONDARY SCHOOLS

Relation of Lunchroom to Department	Number of Schools
No connection with department	18
Managed by home economics teacher, with occasional help from classes	18
Food prepared by classes occasionally sold in lunchroom	14
Class serves the lunch occasionally	4
Class does all the work of luncheon, either regular cooking or special cafeteria class	9
Class serves teachers daily	4
One hot dish served daily by class to school	7

provision for the noonday meal of the pupils. Of the 74 (43 per cent) which have such provision, the home economics teacher is concerned in some way with the food service in all but eighteen schools.

The problem of the relation of the foods classes to the school lunch is not an easy one to dispose of. The subordination of logical instruction in the economic and scientific, as well as the practical, phases of the use and choice of food to mere food purveying for the convenience of the school, is the not uncommon outcome of combining the lunchroom and class instruction. Those teachers who declare their department to have no connection with the school lunch may have been forced into this position in order to avoid this kind of situation.

On the other hand, the occasional preparation of the lunch or, better still, the disposal of products through the lunchroom, or the carefully rotated training of selected students in a cafeteria class, may well make the lunchroom a valuable part of the foods laboratory. The connection must be guarded, however, so that the service of the meal shall not be paramount to the training of the students.

10. Do you teach any courses other than home economics? If so, what? Eighty-eight of the 186 teachers replying do not teach other subjects. The combinations which are effected are indicated in Table IV. Some duplications are included in the tabulation, as each subject was counted separately, and several teachers mentioned more than one additional subject.

TABLE IV

OTHER SUBJECTS TAUGHT BY HOME ECONOMICS TEACHERS AND THE FREQUENCY WITH WHICH EACH COMBINATION OCCURS

Other Subjects Taught	Frequency	Percentage of Subjects Mentioned
Physical education	29	25.5
Drawing	29	25.5
Laboratory sciences	19	16.6
English	9	7.9
Foreign languages	9	7.9
Miscellaneous, e.g., bookkeeping, music, history, and mathematics	19	16.6

Almost one-half of the teachers answering teach no subject other than home economics. This is probably largely due to the state rulings as to certification which make it impossible for high-school teachers holding only the special certificate of the household arts type to teach anything but home economics.

The ruling that teachers holding the regular high-school credential may teach any high-school subject regardless of their preparation is perhaps still necessary, but certainly not desirable. The ideal certification is, of course, that which shall require the bachelor's degree and at least one year of graduate work for all high-school teachers, but which shall make all certificates "special," that is, limited to a certain field. Under this plan the present holders of the special household arts certificate would find themselves in the anomalous position of combining two diverse subjects, one an applied art, the other an applied science. The acquisition of a specialist's training in both these fields is clearly impossible. The solution lies, therefore, in the combination of the scientific phases of home economics with the fundamental sciences they illustrate, and of the artistic and economic phases with their fundamental subjects. Thus, the teacher of foods, sanitation, and child hygiene might also, if necessary, teach chemistry, physiology, biology, general science, and physical education. The teacher of clothing, costume design, and house furnishing might also teach drawing, crafts, civics, and history.

The natural tendency toward this division of high-school teaching is seen in the predominance of physical education, drawing, and laboratory sciences among the classes assigned to home economics teachers. That English and foreign languages are next in frequency is probably due to the large number of classes in these subjects which must be organized by even the small schools. It may be that teachers of all subjects are equally liable to assignment to these classes, provided they have the regular high-school credential.

The possible confusion of all "special" subjects in the minds of principals may have something to do with the frequent assignment of physical education and drawing to the teacher of home economics. That the same teacher should be equally capable in handling the two- or three-sided subject of home economics and the utterly diverse fields of physical education and drawing is unlikely.

11. In what institution was your own training obtained? What degree? How many years have you taught? A summary of the replies to this question is presented in Table V. The number of years of experience recorded by these teachers shows some

interesting facts. As might have been expected, a large proportion, about 65 per cent, have been in service less than five years. A very small number, only ten or twelve, reported more than ten years'

TABLE V

DATA CONCERNING TRAINING AND EXPERIENCE OF 181 HOME ECONOMICS TEACHERS

INSTITUTION	NUMBER OF TEACHERS	NUMBER WITH DEGREE	NUMBER OF YEARS OF EXPERIENCE	
			One to Five Years	Over Five Years
Colleges and universities in California:				
University of California	45	45	45	.....
Stanford University	6	.....	4	2
Pomona College	4	.....	.....	4
Occidental College	2	1	2	.....
University of Southern California	2	.....	1	1
Mills College	6	5	2	4
Total	65	51	54	11
Normal schools in California:				
Santa Barbara State Normal School and other institutions	18	6	7	11
Santa Barbara State Normal School alone	28	.....	19	9
San Jose State Normal School	6	.....	5	1
Fresno State Normal School	2	.....	2	.....
Los Angeles Normal School	6	.....	2	4
Chico State Normal School	1	.....	1	.....
San Diego State Normal School	3	.....	1	2
Total	64	6	37	27
Institutions outside of California:				
Kansas State Agricultural College	6	.....	3	3
Oregon Agricultural College	6	6	4	2
Colorado State Teachers College	4	4	2	2
Teachers College (Columbia)	8	.....	3	5
Stout Institute	8	1	3	5
Simmons College	2	2	2	.....
Pratt Institute	2	.....	1	1
University of Minnesota	2	1	2	.....
University of Illinois	2	.....	1	1
Ohio State University	2	.....	.....	2
One each from other institutions	10	.....	5	5
Total	52	14	26	26
Grand Total	181	71	117	64

experience. The relation of experience to training may mean something in terms of changing fashions in teacher training. A larger proportion, 83 per cent, of the college- and university-trained

teachers are under the five-year mark than the normal-school graduates, of whom 58.7 per cent have had less than five years' experience. A similarly low percentage of younger teachers is found among those trained in institutions outside the state, only 50 per cent of these having less than five years' experience.

The establishment of a home economics department in the University of California only five years ago accounts for the presence of only young teachers from that institution. The tendency, on the whole, seems to be toward an increase in the number of university-trained teachers of home economics, with corresponding decrease in the number of normal-school graduates and of teachers from other states.

It is recognized that these data apply to only 75 per cent (181 out of 242) of the teachers of home economics in the secondary schools which offer such instruction. There is no reason to suppose, however, that the other 25 per cent vary appreciably from the general relations here described. The striking predominance of special household arts certificates in the large city schools is probably largely accounted for by the prevalence there of the supervisory system. Supervisors of domestic science, home economics, or household arts are listed in seventeen of the larger California cities. Many of these supervisors are, of course, the more capable older women who received their training in the earlier days of home economics education and who would therefore be inclined to choose for their departments normal-school graduates and vocationally experienced women rather than the younger university-trained teachers. Older teachers are usually found in these schools also, since the turnover in these positions is apt to be less than in the small country schools.

A question might here be raised as to the wisdom of supervision in the high-school home economics departments. With the present teaching personnel, this may be desirable and indeed necessary, but we should surely face the problem of so raising the standard of home economics teaching as to leave its administration in the hands of the teachers themselves, as is the custom with other high-school subjects.

The type of schools from which the foregoing answers were received is shown by the analysis of the returns presented in Table VI. The apparently small percentage of answers received from

TABLE VI

TYPES OF SCHOOLS AND THE PERCENTAGE OF HOME ECONOMICS TEACHERS REPRESENTED BY REPLIES

Size of School	Number of Replies	Percentage of Replies	Percentage of Home Economics Teachers
Less than 100 pupils	60	32.3	28.5
100 to 400 pupils	84	45.1	32.6
Over 400 pupils	42	22.6	38.9
Total	186	100.0	100.0

schools of more than 400 pupils may be explained by the fact that in these schools there are usually two or more teachers of home economics employed, whereas a questionnaire was addressed to only one teacher in each school.

JUNIOR-COLLEGE COURSES IN 1920–21. I

LEONARD V. KOOS
University of Minnesota

Except for the brief treatment given in McDowell's study[1] of the junior-college movement, we have had no description of the curricular situation in the junior colleges throughout the country. In view of the rapidly rising level of attention to this movement and the accompanying desire to evaluate it, as well as to know what to do in places where the installation of this new unit in our system is contemplated, some interest should attach to the following description of the curricular offering in fifty-eight widely scattered junior colleges. Although evaluation of the situation is not left entirely out of account, what is reported here is descriptive rather than critical.

The sources of the data used in making this study were the bulletins or catalogues of junior colleges. These were supplied upon request sent to the heads of those schools listed as junior colleges in the Educational Directory of the Bureau of Education, and of certain other schools in which the writer had learned through one source or another that junior-college work is being offered. Of the total number of bulletins examined, twenty-three were issued by public and thirty-five by private junior colleges. Sixteen of the former group may be classed as municipal in the sense of being established as parts of city, township, or county school systems, the remainder being state institutions, four of which are normal schools. Fourteen of these public institutions are in North Central states, and seven are in California. Nineteen of the private group are schools for women. Nine of the private schools are in Missouri, eight in other North Central states, and eighteen—a full half—are in southern states.

Little explanation of the method used in this study is required at this point, both because of its simplicity and because it may be

[1] "The Junior College," *United States Bureau of Education Bulletin No. 35, 1919*, pp. 50–53. Washington: Department of the Interior.

inferred from the presentation of the findings as here reported. Mention should be made of the necessity of reducing all credits to the same unit—the semester hour. While there are other units in use, the one named is the most common. Where class periods of less than an hour's duration were reported, they were recomputed to conform to this predominant length. Of course, full accuracy in estimating credit cannot be claimed for every instance, but there has been a close approximation to the true situation.

The classification of courses given in the catalogues was not always followed. For the sake of uniformity and consistency such changes of classification were made as listing household physics with courses in home economics under occupational training rather than under science, educational psychology with education and not with psychology, etc.

Doubtless the amount of work and the number of courses reported in the catalogues are sometimes in excess of what is actually being taught. Those who have had contact with schools during their early aspirational stages will know that classes in some courses do not always materialize. In some instances courses were found to be only partially described and without indication of the amounts of time or credit to be assigned to them. These were omitted from the tabulations on the ground that they probably were described without expectation of immediately putting them into operation. No effort was made to check up on the proportion of courses listed in which instruction was going forward. It may, therefore, in one sense be said that what is described here is the curricular offering which those in charge of the junior colleges plan to put into full operation in the very near future, rather than that which is fully representative of the situation in 1920–21. It must be apparent that if a faithful description of the work actually going forward in junior colleges is desired, the method here used would hardly be satisfactory.

The description which follows is divided into three main parts: first, an effort to give an impression of the total offering; second, a statement of required subjects and courses; and, finally, a presentation in detail of the offerings in each large field.

THE TOTAL OFFERING AND ITS DISTRIBUTION

An impression of the total situation is provided through an interpretation of Table I, which presents, in addition to the average total number of semester hours in all courses offered and the range of this distribution (see foot of table), the average amount offered in each subject or subject-group, the number of junior colleges including no offerings in each of the fields listed, the ranges for each subject, and the average percentage which the offering in each field is of the total offerings. These quantitative descriptions are provided for public junior colleges, for private junior colleges, and for all junior colleges in a single group.

TABLE I

CURRICULAR OFFERINGS OF PUBLIC AND PRIVATE JUNIOR COLLEGES

SUBJECTS AND SUBJECT-GROUPS	AVERAGE NUMBER OF SEMESTER HOURS			NUMBER MAKING NO OFFERING			RANGE IN NUMBERS OF SEMESTER HOURS			AVERAGE PERCENTAGE OF TOTAL OFFERING		
	Public	Private	All	Public	Private	All	Public	Private	All	Public	Private	All
English	17.7	16.9	17.1	1*	0	1	0–33	6–40	0–40	6.9	8.9	8.0
Public speaking	3.0	2.8	2.9	13	24	37	0–18	0–27	0–27	1.2	1.5	1.3
Ancient languages	12.8	19.5	16.9	8	1	9	0–41	0–47	0–47	5.0	10.3	7.8
Modern foreign languages	42.1	38.6	40.0	0	0	0	18–88	10–90	10–90	16.3	20.3	18.5
Mathematics	19.3	13.6	15.9	1	1	2	0–33	0–30	0–33	7.6	7.2	7.4
Science	44.5	22.6	29.9	1	2	3	0–99	0–57	0–99	17.5	10.7	13.9
Social subjects	27.5	18.9	22.3	1	0	1	0–45	3–43	0–45	10.8	9.9	10.3
Bible and religion	0.0	3.9	2.3	23	14	37	0–0	0–12	0–12	0.0	2.0	1.1
Philosophy	2.4	1.9	2.1	13	19	32	0–10	0–6	0–10	0.9	1.0	1.0
Psychology	3.1	2.9	3.0	8	11	19	0–9	0–10	0–10	1.2	1.5	1.4
Physical education	2.7	2.4	2.5	11	23	34	0–12	0–20	0–20	1.0	1.3	1.2
Music	8.8	4.4	6.2	16	22	38	0–88	0–32	0–88	3.5	2.3	2.9
Art	3.1	4.9	4.2	16	21	37	0–24	0–50	0–50	1.2	2.6	2.0
Agriculture	5.8	1.1	3.0	17	33	50	0–29	0–34	0–34	2.3	0.6	1.4
Commerce	20.7	0.5	10.9	6	33	39	0–114	0–10	0–114	10.4	0.3	5.1
Education	5.3	9.7	7.9	17	6	23	0–56	0–43	0–56	2.1	5.1	3.7
Engineering and industrial	10.6	10.7	13.1	6	29	35	0–74	0–230	0–230	6.5	5.6	6.1
Home economics	9.8	16.0	12.5	11	14	25	0–57	0–83	0–83	3.8	8.4	6.3
Other occupational	3.8	0.7	1.9	17	34	51	0–47	0–25	0–47	1.5	0.4	0.9
All subjects	255.0	189.7	215.7	.....	.....	.....	94–628	54–627	54–628	.....	.....	.....

* This school offers "English of Commerce" which has been tabulated under commerce.

The average total offering for all schools is shown to be somewhat in excess of two hundred semester hours. The averages for the two groups show a difference in favor of public institutions of something over sixty semester hours. The range of offering is very wide, being from 54 to 628 in the entire group of colleges.

When the data for municipal institutions alone in the public junior-college group are used—that is, when data for state junior

colleges established in normal schools and elsewhere are removed from the group—the average for public junior colleges drops to 219 semester hours, and the range becomes 94 to 411. Similarly, when from the data for private junior colleges are removed those for three institutions which are at the present time offering work beyond the second year but claim still to be performing the junior-college functions[1], the average for this group is reduced to 160.4, and the range becomes 54 to 335. The typical difference is just as apparent as when first given. The average for the total of 48 junior colleges, both public and private, thus remaining is 180 semester hours and the range is 54 to 411.

The columns of this table offer some important facts and interesting comparisons. To interpret the situation carefully it is necessary to give attention to the first, second, and last groups of these columns in conjunction. The comparisons would have been made more significant if space could have been spared for the distributions of amounts of work in each field, as well as for those measures which have been introduced. The method of interpretation will be illustrated by reference to the facts concerning English, the first subject listed. It may be seen that for all schools the average number of semester hours in the offering in this field is 17.1, and that the averages for the two groups are almost equal (first group of columns); that no school[2] fails to offer some work in this field (second group of columns); that the range in all schools is 0–40 hours with no great difference between the ranges for the two groups of schools (third group of columns); and that the average percentage of the total offering devoted to English is 8.0 for all schools, approximately 1 per cent less than this for the public, and about as much greater for the private institutions. The difference of 2 per cent between the two groups of schools, notwithstanding the approximate equality of the average numbers of hours shown in the first group of columns, is explained by the difference in the average total number of semester hours in all lines of work already referred to. With a smaller average total in all subjects

[1] In these instances, work on the junior-college level only was included in the tabulations.

[2] See footnote to Table I.

the same amount of work in any one subject would constitute a larger percentage.

The relative importance of the several subjects or subject-groups in the offerings of all institutions may be judged by glancing down the third column of figures in the first and last groups of columns. These show that the schools tend to make much the largest single offering and the largest proportion of the total offering in the modern foreign languages. Next in order follow science, the social subjects, English, ancient languages, and mathematics. Fields receiving little emphasis measured in this way are public speaking, Bible and religion, philosophy, psychology, physical education, music, art, agriculture, and other occupational subjects. Lines of work whose extent of recognition lies between that for these two extremes are commerce, home economics, engineering and industrial courses, and education. By adding the percentages for the ancient and modern foreign languages it will be seen that more than one-fourth of the total offering in all junior colleges is in the field of foreign language. By adding the percentages for subjects in the list beginning with agriculture and ending with other occupational, a group apparently designed to recognize occupational aspects of training, a total of slightly less than one-fourth is obtained.

Comparisons of the figures for the two major types of institutions, public and private, bring out some interesting similarities and contrasts. The fields in which the average amounts of work are approximately equal are English (as has already been indicated), public speaking, modern foreign languages, philosophy, psychology, physical education, and art. In the cases of these fields, approximately equivalent proportions of each group of schools make no offering. For the reason given above in dealing with English as an illustration, these average percentages are somewhat greater for private than for public junior colleges.

In the fields of mathematics, science, the social subjects, music, commerce, agriculture, engineering and industrial, and other occupational courses, the average numbers of hours and the average percentages of the total are greater for public than for private junior colleges. On the other hand, in the four fields of ancient languages, Bible and religion, home economics, and education the

private junior colleges tend to outdo the public institutions. The difference between the two groups as concerns Bible and religion is explained by the denominational character of most of the private schools. Their excess of offering in home economics grows out of the large proportion of women's institutions among them. The larger amount of education is explained by the location of the majority of them in southern states and the different standards of teacher-training there obtaining. In the states in which most public junior colleges are established, elementary-school teachers are trained in state normal schools, and high-school teachers receive most of their special occupational training in the last two years of the four-year college course.

Consistent with the contrasts pointed out are the numbers in each group of junior colleges shown not to be offering work in the subject-groups named.

With the few exceptions noted, the comparison shows the public junior colleges tending to make the less conservative offering, the private junior colleges tending to hold somewhat more closely to materials traditionally acceptable.

THE PRESCRIPTIONS

The subjects or subject-groups in which the junior colleges make prescriptions to which all students are held are listed in Table II. This table shows also the numbers of each type of school and of all schools designating such prescriptions. In a small proportion of instances the student is exempt from a requirement if he offers for entrance a certain number of units of work in that field or subject. Work in English (usually the equivalent of Freshman English in colleges and universities) is easily the most frequent requirement. Then follow social subjects (almost always history), physical training, foreign language (more commonly modern), and science. Mathematics and religion are the only other fields at all commonly recognized in requirements. Often specific courses or subjects are required; less frequently the requirement is within a group of courses.

The data here presented also make apparent another contrast —a striking one—between the two types of schools: the private junior colleges prescribe much more frequently than do the public

junior colleges. The only subjects at all frequently made obligatory in the latter are English and physical training. This contrast is also emphasized in a computation of the amounts of work prescribed which is not presented in the table. These data show a total of less than nine semester hours in nineteen of the twenty-three public junior colleges, but in only six of the thirty-five private institutions. In the latter group all but nine have a total prescription of more than twenty semester hours.

TABLE II

NUMBERS OF JUNIOR COLLEGES PRESCRIBING WORK IN CERTAIN SUBJECTS AND SUBJECT-GROUPS

Subject or Subject-Group	Public Junior Colleges	Private Junior Colleges	All
English	14	29	43
Public speaking	.....	4	4
Foreign language	2	23	25
Mathematics	2	15	17
Science	3	18	21
Social subjects	3*	23†	26
Philosophy	.....	3	3
Psychology	.....	3	3
Bible and religion	.....	15	15
Library	.....	1	1
History of art	.....	1	1
Mathematics or logic	1	5	6
Physical training	11	15	26

* History in all cases.

† History in all cases except three, for one of which it is economics, while for two it is history and sociology.

The full meaning of these contrasts does not become apparent without recalling that the total amount of credit required for graduation from the junior college is typically sixty to sixty-four hours (exclusive of physical training). Where the requirements are extensive, the options must be much restricted. Another factor operating to restrict the adjustment of programs for individuals is the small total number of hours and the narrow range of work offered in some institutions. This is partially indicated in the figures at the foot of Table I, but would be more apparent if space were taken to illustrate this restriction. Meager total offerings under some circumstances operate just as do prescriptions, even though the latter may not be specifically designated.

[*To be concluded*]

SOME FACTS REGARDING SEX INSTRUCTION IN THE HIGH SCHOOLS OF THE UNITED STATES

NEWELL W. EDSON
United States Public Health Service

In January, 1920, the United States Bureau of Education and the United States Public Health Service sent out a questionnaire to obtain information regarding the status of sex instruction in the high schools of the United States. This questionnaire was sent to 12,025 A and B (accredited and partially accredited) high schools and brought 6,488 (53.8 per cent) replies.

Its purposes were threefold: (1) To ascertain facts about the number and distribution of high schools giving sex instruction through the regular subjects of the curriculum. (2) To learn of the content and method of the parts of such school subjects as relate to sex instruction and guidance. (3) To discover the attitude of principals toward sex instruction in high schools.

The schools from which replies were received fall naturally into three groups: (1) Those schools giving emergency sex education, i.e., through lectures, occasional talks, sex hygiene exhibits, pamphlets, etc. (2) Those schools giving integrated sex education, i.e., incidentally in the subjects of the regular curriculum. (3) Those schools giving no sex education.

A summary of the returns indicates that there are 1,633 high schools of Group 1, 1,005 of Group 2, and 3,850 of Group 3. In other words, two-fifths of the high schools replying (that is, at least one-fifth of the A and B high schools in the United States) are giving sex instruction of some sort. This is a surprisingly large number in view of the fact that there is no generally accepted content or method of sex instruction and guidance. Evidently there has arisen in many places a realization of the necessity of protecting the youth of our land from the dangerous experiments, the mental distress, and the dread diseases which so frequently result from ignorance in regard to matters pertaining to sex.

The West (Mountain and Pacific states of Table I) leads somewhat in the percentage of schools giving sex instruction, although the total number of high schools there is much smaller than in the geographic division next in order of percentage. If the states are regrouped into only three divisions, the West leads decidedly, the relative percentages being: Eastern states 20.7, Central states 20.2, Western states 32.5.

TABLE I

SECTIONAL DISTRIBUTION OF HIGH SCHOOLS GIVING SEX INSTRUCTION

Geographic Divisions	Total A and B High Schools	Schools Giving Emergency or Integrated Sex Education	Percentage Giving Emergency or Integrated Sex Education
United States	12,025	2,638	21.9
New England states	698	108	15.4
Middle Atlantic states	1,214	374	30.8
South Atlantic states	1,302	186	14.2
East North Central states	3,342	771	23.6
West North Central states	2,528	553	21.8
East South Central states	706	93	13.1
West South Central states	1,108	138	12.4
Mountain states	484	124	25.6
Pacific states	643	243	37.7
No state given	.....	48	.....

While the ratio (Table II) of schools giving sex instruction to those who report as giving none is 11 to 16, there are many variations from this ratio and these are widely distributed. In Utah all schools reporting offer such instruction. In Delaware, Maryland, and New Hampshire relatively little attention is given to the problem.

A further analysis, not shown here, indicates that sex instruction is not limited to large city schools but has sprung up in schools of all sizes in communities of all sizes.

Apparently sex instruction has developed here and there without regard to locality, an indication that it has grown because of a genuine need. Nor is it likely that the status is a result of propaganda. Indeed, the movement is too new and has too little uniformity to be due to propaganda; only two principals indicate on the returns that instruction has been given for eight years or

TABLE II

DISTRIBUTION OF REPLIES BY STATES AND BY KIND OF SEX INSTRUCTION GIVEN

	Total Replies	Emergency Sex Education	Integrated Sex Education	No Sex Education	Total Number of High Schools
Total for United States	6,488	1,633	1,005	3,850	12,025
Alabama	54	8	4	42	181
Arizona	20	7	5	8	29
Arkansas	59	22	11	26	147
California	167	48	79	40	248
Colorado	54	12	9	33	88
Connecticut	33	11	3	19	57
Delaware	15	0	3	12	33
District of Columbia	6	1	1	4	7
Florida	28	7	1	20	61
Georgia	55	15	8	32	176
Idaho	34	14	7	13	64
Illinois	366	99	60	207	678
Indiana	363	65	46	252	709
Iowa	390	132	44	214	804
Kansas	215	65	32	118	425
Kentucky	62	22	8	32	170
Louisiana	81	14	5	62	207
Maine	114	22	6	86	219
Maryland	49	6	3	40	92
Massachusetts	188	23	18	147	263
Michigan	293	92	36	165	598
Minnesota	143	37	23	83	229
Mississippi	55	23	5	27	165
Missouri	217	81	36	100	540
Montana	76	12	15	49	141
Nebraska	139	28	13	98	294
Nevada	13	4	1	8	23
New Hampshire	42	3	4	35	77
New Jersey	95	23	16	56	158
New Mexico	20	1	4	15	43
New York	466	72	72	322	758
North Carolina	169	37	15	117	486
North Dakota	83	29	11	43	142
Ohio	476	137	114	225	981
Oklahoma	50	9	13	28	179
Oregon	119	51	14	54	188
Pennsylvania	587	105	86	396	298
Rhode Island	16	2	3	11	23
South Carolina	40	8	3	29	143
South Dakota	46	17	5	24	94
Tennessee	71	14	9	48	190
Texas	173	37	27	109	575
Utah	21	4	17	0	47
Vermont	36	9	4	23	59
Virginia	65	20	3	42	137
Washington	120	27	24	69	207
West Virginia	88	29	26	33	167
Wisconsin	248	91	31	126	376
Wyoming	26	9	3	14	49
No state	142	29	19	94	.....

TABLE III*

NUMBER OF HIGH SCHOOLS GIVING INTEGRATED SEX EDUCATION IN CONNECTION WITH CERTAIN SUBJECTS OF INSTRUCTION

	Biology	Sociology	Physiology	Hygiene	Zoölogy	General Science	Botany	Other Subjects
Total for United States...	432	202	158	147	78	72	59	193
Percentage for United States†...	32.2	15.	11.8	11	5.8	5.4	4.4	14.4
Alabama	3	.....	.....	.....	.....	2	.....	.....
Arizona	2	1	1	1	1	1	.....	3
Arkansas	6	.....	2	2	.....	1	1	3
California	44	10	10	29	1	4	1	25
Colorado	6	4	1	1	.....	.....	.....	1
Connecticut	3	.....	1	.....	.....	.....	.....	.....
Delaware	1	1	.....	.....	.....	.....	.....	1
District of Columbia	.....	.....	1	.....	.....	.....	.....	1
Florida	.....	.....	.....	.....	1	.....	1	.....
Georgia	7	.....	2	.....	.....	.....	.....	.....
Idaho	3	6	.....	.....	.....	.....	1	3
Illinois	8	10	22	11	21	4	8	11
Indiana	4	5	12	5	2	12	12	11
Iowa	3	16	12	4	1	8	2	14
Kansas	3	8	13	9	1	2	1	12
Kentucky	3	1	1	.....	.....	.....	2	1
Louisiana	.....	1	2	1	1	.....	.....	2
Maine	4	.....	.....	.....	.....	2	.....	.....
Maryland	2	.....	.....	.....	1	.....	.....	1
Massachusetts	6	1	2	5	.....	1	1	3
Michigan	7	3	12	10	5	3	1	1
Minnesota	6	7	6	3	4	1	4	7
Mississippi	.....	2	.....	.....	.....	.....	1	5
Missouri	2	26	3	2	.....	1	1	6
Montana	7	4	1	1	.....	2	.....	4
Nebraska	1	1	5	3	.....	2	2	3
Nevada	.....	.....	.....	1	.....	.....	.....	.....
New Hampshire	.....	.....	4	.....	.....	.....	.....	2
New Jersey	9	1	1	1	1	.....	.....	3
New Mexico	2	2	.....	1	1	1	.....	1
New York	60	2	2	9	1	.....	2	5
North Carolina	8	.....	1	.....	.....	5	1	3
North Dakota	1	5	6	1	.....	.....	.....	3
Ohio	84	34	3	10	2	7	.....	9
Oklahoma	.....	4	3	2	2	1	1	6
Oregon	9	.....	3	4	.....	1	4	3
Pennsylvania	57	7	3	7	16	4	6	6
Rhode Island	1	.....	1	.....	.....	.....	1	.....
South Carolina	2	.....	.....	.....	.....	.....	.....	1
South Dakota	.....	3	1	1	.....	.....	1	1
Tennessee	8	1	.....	1	1	.....	.....	.....
Texas	13	5	7	3	2	1	.....	3
Utah	8	9	2	4	1	1	.....	1
Vermont	1	.....	2	.....	.....	.....	.....	2

* An analysis of Column 3 of Table II.

† Percentages are not exclusive, since a school may offer more than one subject.

TABLE III—*Continued*

	Biology	Sociology	Physiology	Hygiene	Zoölogy	General Science	Botany	Other Subjects
Virginia	.....	.....	.....	.....	2	.....	.....	1
Washington	12	6	.....	3	2	.....	1	6
West Virginia	10	6	3	8	2	.....	.....	7
Wisconsin	8	6	5	4	4	3	2	7
Wyoming	1	2	.....	.....	.....	.....	.....	1
No state	7	2	2	.....	2	2	1	4

more, and even in the same state a surprising variety of methods is used.

Analysis of the figures for schools giving integrated sex education shows (Table III) that it is given more frequently through biology, sociology, physiology, and hygiene. This is probably because the content of these subjects so closely approaches the topics of this instruction and more easily admits of adaptation to include it. For example, biology can deal naturally with these sex topics among others: reproduction in plants and animals, including human reproduction; environmental factors in development; pregnancy in mammals and evolution of care in infancy; internal secretions and their relation to adolescence; secondary sexual characters and their manifestations; elementary principles of heredity and eugenics. Sociology may refer to the relation of venereal diseases to society's defectives, the importance of the family in social evolution and the factors tending to its disruption, co-operation in the household, the influence upon sex relations of such factors as proper housing, wholesome recreation, hours and variety of occupation, etc. Physiology and hygiene may include the functions of cells and their conjugation, ductless glands and hormones, differences between bony and muscular systems of the two sexes, the reproductive system, bacteria and the social diseases, the relation of conservation of health to pre-natal care, etc.

The column headed "Other Subjects" includes agriculture, animal husbandry, bacteriology, civics, domestic science, economics, ethics, home nursing, pedagogy, physical education, and psychology.

In Table IV, biology, botany, zoölogy, general science, bacteriology, agriculture, and animal husbandry have been grouped under the heading "Biological sciences," since the part of each of these subjects which affords opportunity for sex instruction is probably very similar in them all. Physiology and hygiene are so frequently given as one course that they are combined here. The heading "Homemaking subjects" includes domestic science, household arts, home economics, and home nursing.

TABLE IV

NUMBER OF SCHOOLS TEACHING INTEGRATED SEX EDUCATION IN CONNECTION WITH CERTAIN SUBJECTS OF INSTRUCTION

	Human Reproduction					Venereal Diseases					Menstruation					Seminal Emissions				
	First year*	Second year	Third year	Fourth year	Total†	First year*	Second year	Third year	Fourth year	Total†	First year*	Second year	Third year	Fourth year	Total†	First year*	Second year	Third year	Fourth year	Total†
Biological sciences	185	261	114	59	584	41	63	21	16	131	7	11	4	5	22	6	14	5	3	23
Physiology and hygiene	56	53	68	61	182	58	49	59	64	175	43	40	42	49	109	23	19	20	19	59
Sociology	1	0	9	25	29	0	14	12	11	154	0	0	0	0	0	0	0	0	0	0
Homemaking subjects	14	12	9	6	29	1	3	7	1	15	13	13	11	8	26	0	0	0	0	0
Physical education	5	6	7	5	11	10	11	11	10	26	12	10	11	10	23	0	0	5	5	15
Other subjects	1	1	4	3	7	2	2	3	2	11	1	1	1	1	1	0	0	0	0	0

* Many schools did not indicate year.

† Some schools offer subject more than one year.

It appears that the biological sciences lend themselves most readily and logically to consideration of the topic of human reproduction and that they, with the topics of sex instruction included in them, are given more frequently in the second year. There is a notably more even distribution over topics and years for physiology and hygiene, many schools teaching through these courses the four topics noted in the table. Sociology is used largely for the topic of venereal diseases, although few schools state the year in which the subject is taught. Probably the small number of schools dealing with the topics of menstruation and seminal emissions is due partly to lack of opportunity for segregation of sexes, but more to the difficulty which many teachers experience in approaching these important topics in a natural and impersonal way.

On the whole, these topics of sex instruction are considered more commonly in the early part of the school course. While sex instruction should be given at least as early as this, the situation is probably due less to a conviction of the need for sex instruction in those years than to the fact that the subjects through which they are given happen to be taught then. Further support to this inference is given by the figures for physiology and hygiene and physical education, which are frequently taught in more than one year but which show little variation in figures for the different years.

Questions regarding method brought out the fact that three-fifths of the schools giving integrated sex instruction (592) use oral presentation by a regular teacher as one of their methods. One-third (326)[1] make use of supplementary readings from pamphlets and books, the pupils being referred somewhat more frequently to pamphlets. One-quarter (244) give assistance to pupils through individual conferences, and an almost equal number (236) use the lecture method. That 241 schools have reached a point where general classroom discussions on these topics can be held is a most helpful indication that the subject is being sanely and judiciously handled.

Tabulations not given here show that only 32.3 per cent of those schools which offer the biological sciences report that they utilize them as a means for integrated sex education. In the same way only 16 per cent of those offering physiology and hygiene and 5 per cent of those offering homemaking subjects give sex instruction through them. Apparently a large majority of the teachers of these subjects fail to realize that their subjects can include this instruction, or they consciously exclude or avoid it.

Space was provided on the questionnaire for principals to indicate their attitude toward the introduction of sex instruction into the curriculum. From Table V we see that a large percentage of principals favor integrated sex education, even among those in whose schools such instruction is not given. In fact, these principals who favor but do not give integrated sex education

[1] Figures not exclusive, since one school may be giving sex instruction through more than one course.

represent 27.7 per cent of the whole number of A and B high schools of the United States. On the part of those giving emergency sex education, the reason for this attitude may be that while the card exhibit (*Keeping Fit*) published by the United States Public Health Service is conservative and normal in its approach to sex matters, lectures and special talks by local speakers may have emphasized the pathological and abnormal. On the whole, therefore, emergency sex education has not won so many sponsors as has instruction spread over a period of time and given as a normal part of regular subjects.

TABLE V

ATTITUDE OF PRINCIPALS TOWARD INTRODUCTION OF SEX INSTRUCTION

ATTITUDE OF PRINCIPAL	EMERGENCY SEX EDUCATION		INTEGRATED SEX EDUCATION		NO SEX EDUCATION		TOTAL	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Favorable.....	1073	80.9	841	92.5	2262	85.3	4176	85.4
Undecided..... (doubtful)	153	11.5	68	7.5	246	9.2	467	9.5
Opposed.....	101	7.6	.....	.....	143	5.5	244	5.1
Not indicated...	401	.....	35	.....	1165	.....	1601	.....
Total.....	1728	.....	944	.....	3816	.....	6488	.....

Four hundred principals, 79.5 per cent of those answering this question, state that the work has fully met their expectations. Most of the reasons for the lack of success (Table VI) are the same as for the unsuccess in other teaching and can be eliminated by proper administration and further experience on the part of teachers. Occasionally principals have overcome outside opposition by conferences through which parents were convinced of the need for, and the sound character of, the work. Some principals report success despite opposition. While the number of reports is too small to be used as a basis for generalization, the reasons assigned for lack of success are probably typical both in character and in proportion.

Occasionally a principal indicated that sex instruction could not be separated from guidance. However, there was a notable

lack of comment showing a realization that sex education should include not only the giving of information but also a conscious attempt to modify and control the school environment in matters which affect sex and social relationships. Sex education should

TABLE VI

REASONS FOR LACK OF SUCCESS

From within the school:	
Teachers not trained	21
Teachers of wrong personality or attitude	19
Teachers too few	6
Teacher opposition or lack of co-operation	6
Segregation of sexes difficult	15
Complexity of groups	1
Reaches too few	1
Material lacking	11
Instruction not properly organized	21
Instruction too irregular	8
Instruction overemphasized sex	4
Given no fair trial	8
From outside the school:	
Parent opposition, disapproval, or indifference	29
Parents prefer home instruction	2
Public opposition or indifference	35
Board opposition	1

not be restricted to a certain body of information given at a special time and place, but rather should it be spread over a considerable time and given in various relations. Since sex aspects are so closely connected with human conduct, sex education should be interwoven with character education and the creation of right attitudes and ideals.

CONCLUSIONS

1. From the number of attempts in the field of sex education, experimental in character because of the absence of standard content or methods, and from the expressed attitude of high-school principals, there appears a rather widespread belief that sex education is needed.

2. Among the various states there is no uniformity in the ratio of schools giving sex education to those not giving it.

3. The West has apparently progressed somewhat further in developing sex education than have other sections of the country.

4. Not all school subjects are equally adapted to serve as media for sex facts. There are, however, some phases of sex education which can be handled normally as part of a particular subject or of several subjects. Moreover, a wide variety of subjects may serve for presenting at least one phase of sex education.

5. The biological sciences, because of their frequent dealing with sex and reproduction in plants and animals, furnish the readiest vehicles for sex education. On the other hand, sociology, physiology and hygiene (which in its fact content is mainly biological), and physical education are possible avenues of approach, though few teachers are taking advantage of these opportunities.

6. Aside from dealing with the topics of human reproduction and venereal diseases, there is little organized sex instruction in connection with established high-school subjects.

7. Sex instruction is probably given early in the high-school course because the subjects including it happen to be taught then, rather than because of a conscious plan to give such instruction when it is most needed, in early adolescence.

8. There is marked approval of integrated sex education on the part of principals and a feeling that such instruction as has been given has met with success.

9. Emergency sex education (i.e., special lectures, pamphlets, exhibits, etc.) has less approval than sex instruction given as a part of regular subjects in the curriculum.

10. There is apparently as yet no marked realization on the part of principals that sex education should include both instruction and guidance in matters pertaining to the relationships between the two sexes.

11. An exchange of experience among the different schools would undoubtedly allow many well-qualified teachers who are holding back now for lack of knowledge of method to go ahead with sex instruction and guidance.

AN EXPERIMENT WITH A COURSE IN GENERAL TECHNOLOGY

C. T. NEWMAN
University High School, University of Chicago

With the development of power machinery there came a new need in the educational world. Before the power machine arrived, production had been by hand-tool methods. But with the development of power, hand production rapidly gave way to machine production. The once simple process became more and more complex. And the machine, surrounded, as it came to be, by the four walls of a factory or a high board fence, no longer afforded the boy his one-time common privilege of observing industrial processes in operation or freely trying his hand at them.

To meet the needs of this changing situation, various types of industrial training were instituted, each with the more or less vague and indefinite aim of supplying in part the something from which the rising generations were rapidly being shut off. Although the kind of technical training that has been given has supplied many things of value in the life-training of the boy, never to any reasonable extent has it been adapted to boys in general or adequate to the needs of those who have availed themselves of it.

In view of the limited amount of time in a boy's high-school course which is available for technical training, manual training, as it is usually taught, has given too much time to special phases of a subject, while not really specializing in any true sense. Such courses have consumed the boy's time, limiting the range of technical subject-matter his course would cover and at the same time excluding, in many cases, other vitally important subjects from his school program.

A very large percentage of boys, because they have felt that the amount of time spent on these courses was excessive and that the limited scope and character of the content were not in keeping

with their life-interests, have omitted entirely all technical subjects from their school training.

Not infrequently have the boys who have taken these courses gotten the impression that the product itself, rather than the knowledge and power to be acquired, was the all-important thing. Again, the tendency on the part of the boy has usually been to let someone do his thinking for him, though willingly working as best he could at the task that was laid out and assigned to him. The instructor, moreover, has too often accepted this attitude on the part of the pupil as a matter of course and has planned and conducted the classroom work in a manner to appeal to such interests. Naturally, the result of this type of teaching has been to obscure, rather than to emphasize, the true significance of technical training and to inhibit, rather than to stimulate, pupil initiative.

As a means of more nearly meeting the need of the average boy for technical knowledge and training, the experiment has been tried of providing such training through courses in general technology.

By the grouping of minimal essentials, by formulating units of study along the lines of, let us say (general technology) woodworking or (general technology) metal-working, and by a change in the methods of teaching, the attempt is made to bring early into the boy's experience a wide range of technical subject-matter, thereby contributing through this experience to the development of facility in problematic thinking and to the acquisition of skill in carrying forward typical constructive processes.

The educational objectives of a course of this type may be thought of in the following way:

I. INTELLECTUAL

1. Through a stimulation of interest, to encourage active thinking in terms of modern materials and conditions.

2. To promote the efficiency of organized effort.

3. To encourage refinement of muscular control and to fix a certain amount of skill in the manipulation of tools and materials.

4. To aid in the development of the ability to obtain information from the experience of others as expressed in the printed page.

II. SOCIAL

1. To give a wider range of contact with some of the basic materials and fundamental principles on which rests present-day civilization.

2. To promote a higher degree of respect for all classes who are engaged in doing the useful work of the world.

3. To give a useful knowledge of the more common machines and mechanical appliances with which the student comes in contact.

4. To afford basic experience and wider fields of information which will help the student in determining his abilities and his likes and dislikes when he is confronted with the necessity of choosing an occupation.

An example of such a course in (general technology) metal-working, the one offered in the University High School of the University of Chicago, is presented in outline form on page 606.

The method of presentation is by problematic question-lesson sheets. These consist of a series of questions intended to cause the pupil to study the important phases of a subject for himself. He is thereby led to seek information concerning the project from books on the subject, from duplicates of the projects or similar ones, and from the experience of others, the latter being permitted only after he has put forth reasonable effort or quite exhausted his own resources.

The general form and character of the assignments in this course may be illustrated by the typical lessons here submitted.

GENERAL TECHNOLOGY—METAL-WORKING

IRON

1. In what form is iron found in nature? In this form what percentage of it is iron? What constitutes the remainder?

2. How did iron come to accumulate in mines? What and where is Mesaba Range?

3. What geographic reasons made iron and steel manufacturing desirable in this region, as at Gary? In the cities along Lake Erie?

4. What is hematite? Where is it found? What is magnetite? Where found? Why is much of the magnetite of America not used? Why does that of Sweden excel?

5. Make a cross-sectional sketch of a smelting furnace. Explain briefly its operation.

SHOP II. GENERAL TECHNOLOGY—METAL-WORKING

PLAN OF MINIMAL REQUIREMENTS AND OF WORK FOR EXCESS CREDIT

Blocks of Instructional Material	Involves	Minimal Requirements	Excess Credit Zones	
			I	II
Common metals	Study of mining and smelting, transportation, ore regions, use of iron, tin, lead, zinc, copper, nickel, and properties of metals	Problems in identification, testing, and characterization		
Forging: mild steel or wrought iron	Operation of the forge. Use of hand tools. Drawing out, upsetting, bending, punching, shouldering, cutting, and riveting	Nails, rings, line cleats, gate hook, clevis, bracket, spout hook, hasp	Selected repair job at proper degree of difficulty	
Forging: welding and brazing	Determination of welding heats. Use of flux. Study of care of fire	Links, lap weld, brazed collar, brazing band-saw		
Forging: tool steel and tool making	Hand-tool forging, hardening and tempering. Study of methods of drawing tempers and manufacture of tool steel	Center punch, nail set, cold chisel, screw driver, scriber, hammer	Forging and tempering of high-speed steel	
Sheet metal work	Preparation of pitch for soldering. Study of joints. Use of soldering tools. Use of cleaning solutions	Making half-and-half solder, cleaning solution and swab, patching job, funnel, cubical box, pint cup		Advanced problem in development
Thread cutting	Use of standard taps and dies	½″ arbor or inside gauge collar with set screw. Ferrules ½″, ¾″, ¼″, and 1″		
Engine lathe	Turning between centers. Study of mechanism of lathe. Chucking and use of chuck. Use of measuring tools	Threading bolts. Tapping nuts	Advanced problem in between-center turning or in chuck work	
Steam engine	Study of the engine, its parts, and their functions. Study of power transmission	Disassembling, assembling, and operating		
Gas engine	Study of the two- and four-cycle engines, their parts, and their functions	Disassembling, assembling, and operating		
Electric generator and motor	Study of direct and alternating currents. Application in motors and generators. Power transmission	Making an electro-magnet. Testing field coils and brushes. Making and measuring currents		Construction of a simple motor
Speed lathe—bench work	Use of wood-turning tools. Review in use of bench tools	Mallet handle, screw driver handle, tool tray		
Notebook: The work in this will be distributed throughout the above units	Drawing. Reading related material. Writing special reports. Answering questions of problem sheet	Drawings for projects. Illustrations of machines and their operation		Special reports or illustrations

6. Chemically, what is cast iron? What are the physical characteristics and industrial uses of cast iron?

7. Make a cross-sectional drawing of an open-hearth furnace. Explain briefly its operation.

8. What is wrought iron or mild steel? Name their physical characteristics and industrial uses.

9. Make a cross-sectional drawing of a Bessemer furnace. Explain briefly its operation.

10. How do different grades of tool steel differ? What are the physical characteristics and industrial uses of tool steel?

11. What is high-speed steel? How does it differ from common tool steel? Name several kinds of high-speed steel.

12. Describe briefly the crucible process for making steel.

13. What is the effect of sulphur in iron? Of phosphorus?

GENERAL TECHNOLOGY—METAL-WORKING

SHEET METAL AND METHODS OF WORKING IT

1. What is galvanized sheet iron?
2. What are some of the sizes these sheets come in?
3. Which is the heavier, No. 26 or No. 28 gauge?
4. How are sheet metals and wire measured?
5. What are sheet-metal worker's snips?
6. What is a lap joint? Make a small drawing to illustrate.
7. What is a lock joint? Illustrate.
8. What is a snap joint? Illustrate.
9. What is a butt joint? Illustrate.
10. What is meant by a turned edge? Illustrate.
11. What is meant by wiring? Illustrate.
12. What is a seaming tool used for? Illustrate.
13. What is a double seam?
14. What should be the shape of a small sheet metal punch?
15. What should the metal be laid on while being punched?
16. What kind of mark would you make on sheet metal to show where a hole is to be punched?
17. How is sheet tin prepared for soldering?
18. What uses are made of a scriber?

GENERAL TECHNOLOGY—METAL-WORKING

Make a tin cup of 1 pt. capacity, cup to be $3\frac{1}{2}''$ in diameter, $\frac{1}{8}$ lock seam, bottom to be double seam, top edge wired, cup handled.

1. Figure the dimensions of a pint cup, using $3\frac{1}{2}''$ as a diameter. How high must the cup be?

2. Make an object drawing of the cup showing the handle at the side.

3. Make an elevation drawing showing dimensions and construction.

4. What size sheet of tin will it take for the body of this cup, seams included?
5. What will be the diameter of the piece for the bottom?
6. What size wire should be used?
7. How should you find the proper length?
8. Should the wire be put in place before or after putting on the bottom? Why?
9. What should determine the size of a lock seam to be used on a job?
10. What precaution should be used in double seaming the bottom?
11. What form of stake should be used in double seaming the bottom?
12. How should you get dimensions and make the layout for the handle?
13. When should the handle be placed on the cup?
14. How should it be fastened to the cup?
15. What should be done to strengthen the handle?
16. After the job has been soldered, what should be done?

A freehand sketch of each project is required before the work of construction begins. Before any project can be undertaken, the drawing of the previous job and the answers to the question-lesson sheet must be entered in the notebook.

No so-called "exercise jobs" of any kind are given in any unit of study. In choosing the projects of the course an attempt has been made to select those that are practical and, wherever possible, related to other units of the course. For example, in forge work while the boy is learning the operation of shouldering with fulling tools, he is making a tap stock which he drills, files, polishes, and later uses in cutting threads. Again, he forges a bar of copper into a soldering point. It is then drilled, tapped, and a stem added. On the engine lathe he turns a metal ferrule; on the speed lathe, a handle. The parts are assembled. He next learns how to tin the point and uses his own soldering tool during his sheet-metal work.

In fact, in nearly every unit of study the boy finds that he is in need of some tool which he must provide for himself by his own effort. In his machine lathe work he is in need of calipers, a scriber, and a center punch which he makes. In his sheet-metal course he makes and uses his own soldering solution, half-and-half solder, a swab brush for spreading his soldering solution, a scriber, mallets, soldering tool, seaming tool, tinsmith's hammer, etc. Using his own tools creates an added interest in them and,

it is assumed, will develop a feeling of responsibility for their care and proper use.

In each of the units of study it is intended to require the boy to go only far enough into the subject to give him some reasonable idea of its scope and possibilities and to acquaint him with the characteristics of the most essential materials and with the method of operating common machines and appliances. He is not, however, limited to the minimal essential. An outline of the entire course of study is posted in a convenient place on the wall of the shop room. Drawings or word pictures of all projects together with the question-lesson sheets are also posted. The pupil may go as deeply into any subject as time will permit. Furthermore, advanced units of work are provided by which it is possible to earn one- or two-tenths excess credit.

One of the principal criticisms of public-school training in general has been that far too large a percentage of the pupils cannot apply the knowledge they have gained. Not infrequently have we had pointed out to us that some of the men who have won large success in life have done so without school training. Of this class Edison is perhaps the best example. It would seem that long ago we should have learned from the life-experiences of such as he, and the success that has followed those who have taken correspondence-school courses, that the best method of teaching is to have the pupil dig things out for himself or "learn by doing." As Professor Leavitt has aptly phrased it, "A great many teachers should stop teaching and let the pupils learn."

By the method of presentation afforded in the problematic question-lesson sheet, the boy is brought face to face with problems in much the same manner that problems will confront him in later life, when there may be no one to show him how to proceed. He will then, perhaps, ask himself the questions involved in some such manner as they are asked in this course; and it is hoped that his experience here in working out his own solutions or finding the sources of the information required, will have prepared him in some measure to meet that situation.

FOREIGN LANGUAGE TEACHING IN THE HIGH SCHOOLS OF IOWA

CARL G. F. FRANZÉN
Drake University, Des Moines, Iowa

In November, 1920, the writer was asked to prepare a study of language teaching in the state of Iowa, the information for which was available in the records on file in the office of the state superintendent of public instruction. In September of each year every school in the state is required to send to the state superintendent a report specifying the names, salaries, collegiate preparation, and teaching experience of all members of the instructional staff. In regard to the course of study, there is prepared a schedule of each teacher's activities during the day, showing the number of classes he teaches, the subjects taught, the number of pupils in each class, and the names of the textbooks used. Through the courtesy of the state superintendent permission was obtained to tabulate these data from the card records in his office. Since the preparation and verification of the tables were not completed until December, the returns available for this study were practically complete for the whole state. The investigation consequently has a great advantage over one conducted by the questionnaire method, in that the report includes information of some sort concerning 96 per cent of the schools in the state.

High schools in the state of Iowa are classified according to three types: consolidated, normal-training, and other approved schools. Consolidated schools are those located in consolidated school districts; normal-training schools are those in which are offered normal-training courses, the completion of which on the part of the student entitles him to a Uniform County Teacher's Certificate; other approved high schools are those which are not included in the first two classes but which are approved by the state inspector of secondary schools for tuition purposes. Of these three types, the normal-training schools include in their number practically all the high schools in the larger towns and cities.

It was deemed advisable, in the tables presented, to give the figures for each type of school separately in addition to the grand total, for the reason that conditions in the three classes of schools are sometimes very different with respect to certain phases of the problem.

From the data presented in Table I, the following significant facts are evident: (1) Latin is by far the language most frequently taught in those high schools of Iowa which offer only one foreign

TABLE I

NUMBER OF SCHOOLS TEACHING THE VARIOUS LANGUAGES

	Consolidated High Schools	Normal-Training High Schools	Other Approved High Schools	Total	Percentage of Total	Percentage of Those Offering Foreign Languages
Latin only	167	94	172	433	50.52	74.39
French only	7	2	16	25	2.91	4.29
Spanish only	2	0	3	5	0.58	0.86
Norse only	1	0	0	1	0.12	0.17
Latin and French only	10	67	16	93	10.85	15.98
Latin and Spanish only	3	9	1	13	1.52	2.23
Latin and Norse only	0	1	0	1	0.12	0.17
Latin, French, and Spanish	0	9	2	11	1.28	1.89
No foreign languages	136	3	136	275	32.09	.....
Total	326	185	346	857	.....	.....
Total number offering Latin	180	180	191	551	64.29	94.67
Total number offering French	17	78	34	129	14.70	21.65
Total number offering Spanish	5	18	6	29	3.38	4.97
Total number offering Norse	1	1	0	2	0.23	0.34

language. (2) Latin is taught in practically all of the language-teaching schools. (3) The reports indicate that there are only four foreign languages taught in the high schools of the state, namely, Latin, French, Spanish, and Norse. (4) No German is taught in the high schools reporting. (5) French is the only modern foreign language that receives serious consideration in the course of study.

It is to be noted that the number of schools in Table II does not correspond with the number found in Table I. This discrepancy

is due to the fact that Table II includes those schools which not only report the number of students in every class and the number of classes taught, but also specify the different school years in which each year of the particular language course of study is

TABLE II

RATIO OF STUDENTS IN FOREIGN LANGUAGE CLASSES TO TOTAL ENROLMENT

HIGH SCHOOLS	NUMBER OF SCHOOLS	TOTAL ENROLMENT	NUMBER OF STUDENTS STUDYING FOREIGN LANGUAGES	PERCENTAGE OF ENROLMENT	NUMBER OF CLASSES	AVERAGE NUMBER OF STUDENTS PER CLASS	SCHOOLS NOT REPORTING ENROLMENT
	Latin						
Consolidated....	159	7,256	2,413	33.26	246	10	16
Normal-training.	115	19,864	4,731	23.82	321	15	37
Other approved..	171	10,677	3,530	33.06	311	11	16
Total.....	445	37,797	10,674	28.24	878	12	69
	French						
Consolidated....	14	788	161	20.43	16	10	2
Normal-training.	46	10,561	964	9.03	85	11	20
Other approved..	27	3,194	606	18.97	47	13	5
Total.....	87	14,543	1,731	11.90	148	12	27
	Spanish						
Consolidated....	2	63	12	19.05	2	6	3
Normal-training.	12	3,253	346	10.64	26	13	4
Other approved..	5	836	105	12.56	8	13	1
Total.....	19	4,152	463	11.15	36	13	8

offered. Many of the schools listed in Table I do not give complete data concerning these points. The item that stands out conspicuously in Table II is the much larger number of students studying Latin than any of the other three languages. Not only is the number larger, but the proportion of students to the total enrolment of the various schools is over twice as large for Latin as for French or Spanish. In the 445 schools that offer Latin, nearly 30 per cent of the students are studying this subject, whereas in the 87 schools offering French only 12 per cent of the students are in French classes.

So far as the absolute size of classes is concerned, there seems to exist practically no difference between the subjects. Classes are small in consolidated schools, while the general average for all schools and all languages is twelve members to the class.

An elaboration of Table II was made to discover the relation that exists between any one language and other languages taught in the same school, or what the situation was when only one language was taught. The table, omitted from this article, again showed a decided preponderance of Latin; 355 of the 467 schools reporting teach Latin as the only foreign language, and in these schools are to be found almost 70 per cent of the total number of students studying Latin. Two-thirds of the 61 schools in which both Latin and French are offered are of the normal-training type, representing the larger schools in the state. Here the proportion of Latin students to French students is in the ratio of two and one-third to one. The Latin classes are also slightly larger in size than those in French. Again, the normal-training schools are practically the only ones that offer the combinations of Latin and Spanish, and Latin, French, and Spanish. In the case of Latin and Spanish we find practically the same relation as exists between Latin and French, while in the six schools which offer all three languages, the combined number of students taking French and Spanish is almost equal to the number of those taking Latin. Of the three languages other than Latin, French is the only one that is offered to any extent as an only language in the course of study. This situation is especially true of the approved type of school.

A similar detailed comparison was made showing how many of the schools offering Latin give one, two, three, or four years to the subject, and also the number of pupils enrolled. It was found that the most frequent offering is that of Latin I and Caesar, about one-half of the 445 schools in which Latin is taught providing for these two courses. The number is evenly distributed between the three types of schools. Fifty-two per cent of all the students who are studying Latin are enrolled in schools that offer but the first two years, while 22 per cent are found in schools offering only Latin I. Just as was found to be the case in regard to combinations of various languages, we find that normal-training schools are

practically the only ones to offer three and four years of Latin, or the combinations of either Latin I, Caesar, and Cicero, or Latin I, Caesar, and Virgil.

There are practically as many schools offering first- and second-year French as offer first-year French only. None of the consolidated schools present data concerning enrolment in the two-year combination, although one is reported as having two years work in French. The same statement is true of four years of French. Another fact to note is that the schools which offer two years of French have an enrolment two and one-half times as large as those that offer French I only, though the number of schools is practically the same.

The situation with regard to Spanish is similar to the case of French. Larger schools are the only ones to offer this language. In the eight normal-training schools that offer two years of the subject we find 62 per cent of the total number of students studying this language.

Another question of interest is the level at which any given year's work in the foreign language is studied. When is first-year Latin most commonly taught? We find that the type of school makes a decided difference in the position of Latin I in the curriculum and the consequent position of Caesar, which in almost all cases is given in the year following that in which Latin I is taught. In the consolidated and approved schools (the approved schools consist largely of the smaller schools throughout the state), first-year Latin is offered in the third year and Caesar in the fourth year. Of course, it is to be expected that Cicero will be offered in the third year and Virgil in the fourth year of larger schools, although we do find cases in which Virgil is offered in the third year.

French is almost universally offered in the last two years of the high-school course, French I in the third year and French II in the fourth. Third- and fourth-year French are reported from only one school. Again, the situation that has been illustrated in the case of French is paralleled in that of Spanish.

Many schools failed to make a report concerning the language textbooks, but from the information presented by those reporting we may determine the textbooks most commonly used in each of the languages.

With the exception of the Smith texts, in which case few of the schools specified whether they were using Smith's *Elements of Latin*

TABLE III*

TEXTBOOKS IN LATIN AND FRENCH IN USE IN THE SCHOOLS REPORTING

	Consolidated High Schools	Normal-Training High Schools	Other Approved High Schools	Total
	First-Year Latin			
Smith†	58	53	56	167
Collar and Daniel	46	9	47	102
D'Ooge	19	19	20	58
Place	9	7	6	22
Bennett	6	4	3	13
Gunnison and Harley	3	6	1	10
Scott	3	2	2	7
Pearson	2	1	3	6
	Second-Year Latin			
Walker	34	37	33	104
Kelsey	35	13	23	71
Bennett	9	14	18	41
D'Ooge and Eastman	16	8	17	41
Allen and Greenough	7	3	15	25
Gunnison and Harley	6	5	4	15
Harkness and Forbes	0	0	6	6
Rolfe and Dennison	3	0	2	5
	Third-Year Latin			
Bennett	0	10	3	13
Kelsey	0	10	0	10
	Fourth-Year Latin			
Knapp	0	11	0	11
Bennett	1	6	0	7
	First-Year French			
Chardenal	9	9	10	28
Fraser and Squair	4	9	6	19
	Second-Year French			
Classics	1	9	6	16
Chardenal	0	4	3	7

* Only those textbooks are recorded which have a frequency of occurrence of five or more.

† *Elements of Latin* or *Latin Lessons*.

or Smith's *Latin Lessons*, the Collar and Daniel is the most frequently used text. In second-year Latin Walker has decidedly the preference, although Kelsey's book is used as largely in consolidated schools and to a considerable extent in the approved schools. In Cicero the only two texts being used are those of Bennett and Kelsey, with practically no difference in the relative standing. In Virgil the field is again limited to two, Knapp and Bennett.

In first-year French there are but two textbooks that are used to any great extent. These are Chardenal and Fraser and Squair. As for second-year French, with the exception of mention of the fact that classics are read, no specific information as to texts is given.

Fourteen of the schools offering Spanish reported concerning the textbooks in use. Of the texts mentioned only that of De Vitis is used in as many as four schools.

SUMMARY

This investigation has shown that in the state of Iowa for the school year 1920–21 there are four foreign languages being taught, namely, Latin, French, Spanish, and Norse, and that this order represents the frequency of occurrence of these languages. Latin is taught in more schools, whether singly or in combination, than any other foreign language. The number of students enrolled in Latin courses is almost five times the number studying other foreign languages. The most frequent combination with Latin is French. French is offered in one-fourth the number of schools that teach Latin and occurs more frequently in combination with Latin than by itself. Similarly, Spanish is offered in one-fourth the number of schools that teach French. Although normal-training schools are less in number than the consolidated and other approved schools, they have a much larger enrolment (from 50 to 75 per cent of the total for each group, as shown in Table II). Consequently, they enrol more students in their language courses.

The larger number of schools give but two years of any one foreign language. This instruction is offered in the first two years of high school in the larger schools, and in the last two years in the smaller schools.

OUR COMPLEX CIVILIZATION AND THE GENIUS OF ITS YOUTH

HARRY H. MOORE
Secretary, National Committee for Teaching Citizenship

I

Day by day it is becoming increasingly evident that the intelligence of man is not keeping pace with the growing complexity of modern society, and that fundamental change must be brought about in education if the decadence of civilization is to be prevented and social control achieved.

For fifty thousand years, more or less, man led a comparatively simple life. The community, if not the family, was economically independent. Each small group produced all necessary materials for food, clothing, warmth, and shelter. Division of labor only slightly developed. Then, only one hundred and fifty years ago, began the age of steam and electricity. Factories and mills were built; rapid communication and transportation drew the world together; the modern city sprang up. Specialization in production made each group dependent on various other groups. A strike among coal miners in the dead of winter came to imperil the lives of millions. When the board of directors of a corporation in one city decided to decrease its output, a machinist employed by another corporation three thousand miles away was thrown out of work, his wife was forced into industry, and his new-born babe died of malnutrition. The outstanding effect of the Industrial Revolution was to bring about unprecedented complexity of social and economic organization.

Now, at the end of the Great War, the world is in chaos. Humanity seems impotent before a prodigious array of political, social, and economic problems. Famine is abroad in the world. In a large part of Europe dangerous radicalism is in control. Europe is economically disintegrating for lack of goods; the United States has the materials and the labor for manufacturing these goods, but seems unable to make the domestic and international adjustments

necessary to prevent depression and unemployment here and to save the lives of thousands abroad.

In the largest city of the United States, 20 per cent or more of the children are suffering from malnutrition, partly because their parents cannot afford to buy enough nourishing food. At the same time, fruit is allowed to rot in orchards and grain is unmarketed because of low prices. Nearly one-fifth of all children in the United States between ten and fifteen years of age are earning their living. Five and one-half millions of our people are illiterate, and a majority of our children are being produced by the less intelligent part of the population. Institutions for the feeble-minded are overflowing, though many of those who should be confined in them are at large spreading crime and disease. Two million children now in the schools of the country will die of tuberculosis if the present rate continues. And only three years after the close of the world's greatest war, which was fought, so we said, to end war, the nation is spending eight hundred million dollars per year in preparing for another conflict.

Such is the situation after one hundred and fifty years of industrial development, characterized largely by mechanical invention.

II

The impasse confronting society today may be due in part to a lack of morality and religion—to hatred and greed, to our unwillingness to practice the teachings of Jesus. But it is due also to a lack of intelligence. Our attitude toward our present problems is incredibly stupid. For physical sickness we require a physician with eight years of college and university training and with long clinical experience; for an engineering problem we demand skilled, highly trained, and high-salaried scientists; for war the world has mobilized its most brilliant chemists. But when a mayor or congressman is chosen, systematic training is not the chief requisite. Unfamiliar as we are with social science, we do not require scientific preparation on the part of those whom we select to deal with our political, economic, and social problems.

The politician of today understands law, and he knows politics; that is, he has become thoroughly familiar with the machinery of

government. While such knowledge might have sufficed in the simple social organization of early American history, it is now inadequate. The revolution brought about by steam and the machine has made politics infinitely more complex; yet the rank and file of legislative, judicial, and administrative officers of today are trained only for the simple society which has passed.

For years it has been known by sociologists and psychologists that feeble-mindedness is closely allied with delinquency and crime, the social evil and pauperism. They have known that, by the segregation of all the feeble-minded of one generation, the constant and heavy expense due to these specific problems can be greatly reduced. But year after year legislators appropriate vast sums of money in punishment of crime and in relief of the poor, while they fail to recognize the significance of feeble-mindedness.

Dangerous radicalism should not be much more perplexing to the human mind than the problems young men are meeting successfully in the field of engineering. The testimony of many judicious observers, however, indicates that methods recently used by the federal government have tended toward the development of radicalism rather than toward its suppression.

Though it is doubtful whether there has been at all times in man's life upon earth sufficient food for everyone, in the United States today our storehouses are overflowing. There is enough food for all; and virtually all men are willing to labor for their share of it. Yet now with ten to fifteen million persons without sufficient food, clothing, and shelter to maintain themselves in a state of working efficiency, no serious attack is being made by any authoritative body on the problem of the distribution of wealth.

In the early days of human existence, small groups were unable to live peacefully in close proximity; clans became tribes, however, and tribes were welded together into nations. Today there are those politicians who say that the development of co-operative life can go no farther, that the nation must be supreme. In the opinion of many congressmen, the only way to preserve peace is to develop an unsurpassed fleet of ships and aircraft. So we pour our wealth into armaments—85 per cent of our national income, even now in times of peace.

In industry, the greater the task to be performed, the more useful the unconventional chemist or electrician becomes; but in economics, in sociology, and in domestic and international politics, we are sometimes afraid of genius. Occasionally a man in these fields applies the intellectual energies of a life-time to the solution of some specific problem; he acquires a knowledge regarding that problem surpassed by none; and then, when he proposes an unconventional measure, he is denounced as a dangerous citizen.

The failure of our lawmakers and administrative officers to deal wisely with social problems should not be charged against them. They cannot act more intelligently because they have not been adequately educated. In public schools and colleges, their interests and enthusiasms were directed largely to the study of mathematics, languages, and natural sciences, but not to the study of subjects which directly promote the intelligent handling of social problems.

Examinations of many hundreds of older high-school students reveal a deplorable lack of social knowledge.[1] Asked to indicate all of the social evils about which they have any information, they name, dancing, motion pictures, "joy riding," roller skating, and customs which may be of questionable propriety to some persons. To the minds of many of them, poverty does not exist. Most of them do not know what the words "sociology" and "economics" mean. It is true that they study civics, but in many schools civics deals only with the machinery of government. The problems for the solution of which the machinery exists are ignored. Courses in "current events" may be helpful, but they often consist largely in the exchange of unintelligent opinion. In college an increasing number of students are discovering the social sciences. But the vast majority never reach college. They leave high school and enter business or political life pitiably equipped to handle with understanding the problems which all citizens must inevitably face. If, occasionally, an individual achieves a position of wise leadership, it is not because the schools have prepared him for it.

[1] See Harry H. Moore, "The High School Boy and Modern Social Problems," *Educational Review*, LIV (October, 1917), 256–65.

III

While human intelligence has not kept pace with the rapidly growing complexity of social and economic life, it has applied itself to mechanical invention with marvelous success. Civilization abounds with contrivances which one hundred years ago would have astounded even the most imaginative scientist. The steam engine, the telegraph, the automobile have almost ceased to interest us as inventions; wireless telegraphy and the aeroplane are rapidly becoming commonplaces.

Before the world-war, men used relatively crude devices for killing other human beings—first the thrown stone, then the javelin and the arrow, later the simple bullet and solid ball. Now, chemistry and electricity have revolutionized warfare. The Great War attracted the highest inventive genius. During its first five months the British Admiralty received six thousand offers of new scientific devices. During the last days of the war an American chemist, temporarily in the service of the United States government, invented a poison having many times the killing power of the most deadly gas previously used, and a large quantity of it was manufactured. A pilotless aeroplane was also devised which could be guided by radiograph. Thus, aeroplanes loaded with this gas might steal close to the enemy's lines and release a sufficient quantity to annihilate whole divisions of the opposing forces.

Recently an inventor brought to Washington devices which he claimed would make the United States the paramount military power of the world. "I have a device," he asserted, "with which I could wreck New York City in five minutes, sending its tallest towers toppling into the Hudson and leaving its busy streets a trackless mass of débris." However exaggerated these claims may be, they show the direction in which one man has applied his inventive genius.

In the development of wireless telegraphy, the atomic energies of matter were utilized mechanically for the first time. But wireless telegraphy has only tapped the power inherent in the atom. Researches are being continuously carried on. If means are devised, says Sir Oliver Lodge, to utilize fully the atomic energy

in an ounce of matter, sufficient force would thus be made available to raise the German ships sunk at Scapa Flow and pile them high on the top of the Scottish mountains. He hastens to add, however, that he hopes the human race will not discover how to use this energy until it has the brains and moral vision to use it properly.

IV

If society is to prevent the slow starvation of its poor, if devastating epidemics of disease are to be avoided, if our criminal population is to be reduced, if the reproduction of feeble-minded is to be controlled, if a sudden political-economic revolution is to be averted, if we are to be saved from an international cataclysm which discerning historians prophesy would destroy European civilization, the inventive genius of man must be applied in the field of the social sciences.

Problems essentially political have become infinitely more complex since the days of Franklin and Jefferson. They must now be dealt with as economic, sociological, and psychological problems. The tariff, the income tax, the inheritance tax, the control of corporations, the banking system, the ownership of public utilities, hours of labor, wages, and unemployment are largely economic questions; only those persons can deal understandingly with them who have studied the science of economics. And economics is a subject which cannot be mastered by casual reading.

Disease, ignorance, congestion of population, juvenile delinquency, and crime are a few of the pressing problems which are sociological in their nature. No state legislator, no mayor, no congressman, no department head in Washington, who is not thoroughly grounded in sociology should expect to make much progress in remedying these specific evils. A comprehension of sociology cannot be acquired by a cursory reading of a few popular volumes; an extensive background of training is necessary, including a knowledge of biology and anthropology.

Furthermore, an understanding of many political, economic, and sociological problems depends upon a knowledge of psychology, because, as we now know, human behavior in various situations giving rise to these problems depends largely upon the emotional

and instinctive make-up of the individuals involved. A governor of a state is not likely to deal wisely with a mob of I.W.W.'s unless he understands the impulses which are so important in determining their behavior. A judge or a prosecuting attorney cannot give intelligent help to the criminal unless he understands the relation of the instincts to antisocial conduct. A corporation president will never be able to deal adequately with a strike until, through psychology, he comes to an understanding of the human impulses which play a part of first importance in the problems of modern industry.

Finally, the prevention of war requires among political leaders a fuller knowledge of social and economic history. They must understand the part that war has played in the evolution of the race, the influence that science has had upon warfare, and the ways in which suspicions, fears, and hatreds have brought about antagonisms among nations. History is necessary to give the political scientist a sense of common destiny for mankind and a vision of the human progress possible in a world freed from the crushing costs of war.

Only through the study of government, economics, sociology, psychology, and socialized history, then, can there be developed that intelligence which will deal effectively with the present unparalleled situation. The making of a social scientist, no less than the making of a chemist or an electrical engineer, requires patient and intensive application to an extensive and rapidly growing body of subject-matter. Many of the problems before us now obviously cannot be solved by existing political expedients. They require the patient development of new methods; and it is inventive genius which must devise these new methods.

V

How may the inventive genius of man be directed to the solution of our social problems?

Some measures may be utilized to assist the present generation of lawmakers and executives. The publication in widely read magazines of articles in the fields of sociology and economics, and the increasing use of books on these subjects will help in the

development of social knowledge and judgment. The rapid growth of university-extension courses, and technical institutes is evidence that progress is being made toward sound scientific thinking. It is a matter of common observation, however, that mayors of cities, governors of states, and members of state legislaures are not spending much of their time in studying sociology and economics. By many of them the best literature in these fields is considered dangerous, for they have the conservatism of mature years and the prejudices of a past generation.

Neither can we depend chiefly upon the teaching of social science in our universities and colleges. It is true that in such institutions are to be found some of the best teachers, and it is here that a large part of social research, essential to scientific approach, must be conducted. But in our colleges there are not enough students to insure the wise solution of our social problems twenty years hence. There are in the institutions of higher learning of the United States only a few more students than there are feeble-minded persons in the country. We must develop understanding and social spirit among a larger number of persons. The best place to reach this larger group with the necessary education is within the high schools. The genius which gives society an intricate electrical device and a destructive poison gas is inherent in adolescents; and it is here that this genius may well be directed toward our social problems.

In the present crisis the high schools have a remarkable opportunity to develop social intelligence. Their graduates in large degree create the public opinion by which federal, state, and local governments will be controlled in the future. The two million boys and girls in our high schools today constitute the largest and most impressionable group in which intelligence and social spirit may be successfully developed.

The students of our secondary schools have both the intellectual capacity and the emotional attitude which make this opportunity unique. When there is occasion to acquire social facts, high-school students give evidence of a wide range of interest and a well-developed capacity for comprehension. The work of certain modern psychologists shows that reasoning power is almost as

highly developed at sixteen and seventeen as at a much later age. There is, of course, a great increase in mental content when one reaches maturity; social facts will suggest more associations to older persons. But the ability to comprehend complex problems and to reason seems to be as great at seventeen as at fifty. The experiences of high-school teachers support this view. Students who are able to grasp the intricate and abstract problems of higher algebra, chemistry, and physics, can deal with at least the elementary subject-matter of sociology and economics. Many of them, of course, are not endowed with the capacities necessary in positions of large responsibility; but through the teaching of social sciences to high-school students the general level of social intelligence may be raised, young people may be led to specialize in these subjects in college, and the development of skilled social scientists would be encouraged. In addition, the general training of the larger group would result in a demand for trained specialists in positions of leadership and responsibility.

High-school students not only have the necessary mental capacity, but also reveal considerable concern in such social problems as they are able to observe. A high-school boy of eighteen was stirred by the ravages of the influenza epidemic of 1918–19. "Thousands of people were dying," he writes. "What hurt me most of all was the death of the small children. . . . . I resolved, if possible, to help check this disease. I distributed circulars to many hundreds of people, and in this way they became acquainted with the cause and treatment of the 'flu.'" Debating made one girl ambitious to help the people of the slums. "In order to prove my points," she writes, "I went to work in a factory during my Christmas holidays. That one week turned my soul." A careful statistical study has shown that most high-school students have altruistic ambitions. They also uphold their professions in conduct. A girl sold over seven thousand dollars worth of Liberty Bonds; worked as a stenographer for Liberty Loan headquarters without pay; collected materials five hours a day for ten days for the Salvation Army; worked in a public library receiving books for soldiers; and made sweaters, socks, and wristlets. A boy made tables and equipped a building with shelves and cupboards for the

Red Cross, sold war savings stamps, and worked on a farm all summer for six and one-half dollars a week. During the war, thousands of high-school students entered into various forms of patriotic work for little or no financial compensation.

Of course, the altruistic ambitions of high-school students are naïve and in most cases are soon abandoned. But is this surprising? Not when we find that only an exceedingly small percentage of students who report such interests say that they were developed in the high school. And it appears that when social ambitions arise independently of the high school the school does not even become aware of them.[1]

VI

During recent years courses in sociology and economics have been introduced into the curricula of a few progressive schools. Of 5,054 high schools from which the United States Bureau of Education received information for the year 1918–19, 36 per cent were teaching economics and 5 per cent were offering some course which could properly be called "sociology." Unfortunately, however, many of the schools reporting economics still use the old, unsocialized course which deals with economic theory—value, price, rent, money, banking, and such topics—to the exclusion of such modern aspects of the subject as wages, strikes, and the cost of living.

The comments of high-school students who have studied sociology are illuminating.[2] "I think I have gained more useful information in this term's work," writes one student, "than in any other term of any subject during my four years in high school." Says another youth, "If the average adult knows as little about these problems as I did, I don't think it is surprising that the conditions do not get better any more quickly than they do."

Numerous comments indicate that boys and girls have been aroused from complacency. "Sociology has surely changed my

[1] See Harry H. Moore, "The Altruistic Impulse of Older High School Students," *Educational Review*, LIX (April, 1920), 271–95.

[2] See Harry H. Moore, "A High School Course in Sociology," *Educational Review*, LVII (March, 1919) 181–93.

outlook on life," writes a girl. "I have never had a subject so upset my ideas concerning conditions." Experience has shown, however, that sociology may "upset" the ideas of students without destroying their ideals. One student states that the course did not change his ideals, but made him see them more clearly. "I used to think that I would be content to live a quiet, happy life, making money and enjoying it," writes another, "but I feel now that such a life would be an empty one if I ignored the responsibility of aiding in the great war of humanity."

It is during the high-school years that boys and girls become social beings. At this period they have not become hardened by disillusionment and disappointed hopes; they have not become blasé. They have vigorous imaginations; risk and adventure appeal to them; they plan careers of high achievement. It is just at this time that boys and girls are eager for the truth concerning society, and it is at this time that they are ready to determine to give themselves to a noble cause, to serve mankind, to sacrifice life itself, if necessary, for the sake of others.

Organized education has hardly tapped the intellectual and spiritual energies of youth. These young people have ambitions which are infinitely precious. To a large degree our ability to meet successfully the baffling social problems of our present civilization rests upon our utilization of these energies and ambitions. The future depends largely upon our young people. If they are given an opportunity to prepare themselves, not only will they play their part courageously, but they will bring a high degree of genius to the solution of the most intricate problems humanity has ever been called on to face.

Educational Writings

REVIEWS AND BOOK NOTES

The high-school course of study.—That secondary education in the United States is experiencing a process of fundamental reorganization is clear to the most superficial observer. As a consequence, a thoroughgoing study of every phase of high-school practice is needed, and in no instance is this more necessary than in the case of the curriculum. It is, therefore, with unusual interest that we direct our attention to a recent study[1] of the development of high-school curricula.

For two reasons this investigation by Dr. Stout represents a particularly valuable contribution. In the first place, the period covered is in reality the period of the high school in the history of American secondary education, although the origin of this institution dates from 1821. In the second place, the North Central states may be regarded as peculiarly the home of the public high school, although the first of its kind appeared in Boston.

The value of the study is further enhanced by the method used. Dr. Stout has gone to the original sources and has secured practically all his data from published courses of study and from the textbooks used. The number of schools studied as representative of a particular period varies from twenty for the first period, 1860–65, to sixty for the last period, 1915–18. Furthermore, these schools were selected so as to represent fairly well the geographical area concerned, although few small schools were studied because courses of study were not available. While it is true that the actual practice not infrequently departs from both the course of study and the textbook, this method undoubtedly has a high degree of validity.

Besides an appendix of tables and a bibliography, the monograph is composed of an introduction and three major divisions or parts. In the former is given a brief résumé of the character of the first high-school curricula as organized in the schools of New England and the Middle Atlantic states from 1821 to 1860. Part I is devoted to subjects and their organization into curricula during the period 1860–1900; Part II contains an analysis of the subject-matter itself during the same period; and Part III treats the period 1900–1918

[1] JOHN ELBERT STOUT, *The Development of High-School Curricula in the North Central States from 1860 to 1918.* "Supplementary Educational Monographs," Vol. III, No. 3. Chicago: Department of Education, University of Chicago, 1921. Pp. xi+322. $2.00.

as the earlier period is treated in the two preceding parts. The work abounds in concrete material.

The conclusions drawn from the study are many. There is not space to present all of them here; but a few will serve to illustrate their nature and will throw light on the general character of the investigation. The development of high-school curricula has proceeded along two lines—preparing for college, on the one hand, and fitting for life, on the other. This period has witnessed the decline and disappearance of certain subjects, such as mental philosophy, moral philosophy, logic, evidences of Christianity, classical antiquities, and ancient geography. While one commercial subject, bookkeeping, appeared in the early curricula, "the beginning of both commercial and industrial education is found in the closing years of the century." From the first, those courses which have fitted for life have lacked the careful organization and clear-cut purposes that have characterized college-preparatory courses. The range of subjects has greatly widened during the period, particularly in the fields of English, the social studies, and the commercial and industrial branches. In certain subjects, such as mathematics and the foreign languages, the change in the character of the subject-matter has been negligible; while in others, notably literature, biology, physics, chemistry, and civics, the change has been very marked. Civics, for example, has passed through three well-defined periods, as have also English literature and English composition. "The practice of requiring all pupils to take the same subjects has rapidly declined" since 1900. During the last decade the reorganization of the curriculum has been proceeding at a particularly rapid rate, because of the maturing of certain tendencies appearing in the later years of the previous century; and Dr. Stout is of the opinion that this is certain to continue until the scope of secondary education is further extended and permanent adjustments are made.

The work possesses so many excellencies that one hesitates to suggest an adverse criticism, but there are one or two things perhaps that ought to be said. As already observed, the years from 1860 to 1918 are divided into two periods, the first covering the years from 1860 to 1900, and the second the years from 1900 to 1918. There is, of course, no objection to this, but the two periods have not received exactly the same treatment. For example, certain tables are given showing changes in emphasis from 1860 to 1900, but corresponding tables are not given for the later years. As a consequence, the continuity of the study is broken at certain points.

Again, while the development from 1860 to 1900 is studied in five-year periods, the changes since 1900 are studied only as they appear in sample curricula from two periods, a six-year period from 1906 to 1911, and a four-year period from 1915 to 1918. The more recent periods have not been as carefully studied as were the earlier ones. If some difference in emphasis was necessary, it would be easier to justify the opposite procedure, giving the greater attention to the changes since 1900.

But these criticisms are unimportant beside the real merits of the work. Dr. Stout has given us an authoritative account of the development of high-school curricula by going back to the sources, and this account includes much that should guide us in the period of reorganization ahead. No student of secondary education can afford to miss a careful reading of this volume.

GEORGE S. COUNTS

YALE GRADUATE SCHOOL OF EDUCATION

Partial correlation and regression.—The author of a recent monograph[1] on the calculation of partial coefficients of correlation and regression equations has discussed the meaning of multiple correlation and developed some of the formulas in a notation somewhat different from that of Yule. In the body of the monograph is a chart consisting of parallel logarithmic scales by means of which the calculations may be performed with a fair degree of accuracy. A larger chart may be obtained separate from the printed material.

The section on the meaning of partial correlation is helpful in the clearness with which the notation is presented and in the illustrative examples, but the analysis on the whole is fragmentary, possibly because of the brevity of the monograph. Thus, in discussing the regression coefficient, the writer resorts to the phrase, "It may be readily proven by calculus," avoiding the most fundamental part of the whole analysis for which the reader would have to turn to Merriam and Yule. Again, by avoiding the normal equations, the writer finds himself puzzled by the independence of the variables, a matter not to be settled by "the keen philosopher," as he suggests.

In discussing the formulas in multiple correlation, Dr. Kelley makes use of three new symbols, z, k, and β, which simplify some of the results formally, but only slightly from the standpoint of calculation. The correlation coefficient and the writer's k-function bear the same relation as the sine and cosine, and hence may be obtained from trigonometric tables, or more roughly from the chart accompanying the monograph. The quantities z and β are simple functions of the original variables and regression coefficients, but since the latter give "the most serviceable form of regression equation," as the writer points out, the use of the former quantities is at least open to question.

The chart itself will be helpful to anyone who can manipulate the slide rule and interpolate scale values with accuracy but for most work will be less satisfactory than the ruler, the principles of construction being of course the same. The scales for the k-functions are ingeniously arranged and will be of service in work requiring rough approximation. A thin transparent straight-edge might well accompany the chart.

KARL J. HOLZINGER

[1] TRUMAN L. KELLEY, *Chart to Facilitate the Calculation of Partial Coefficients of Correlation and Regression Equations.* "Stanford University Publications," Special Monograph No. 1. Stanford University, California: Stanford University, 1921. Pp. 24. $1.50.

School administration and school buildings.—The changing conceptions of the nature and the function of school training may be traced, in so far as these have developed in any given period, by setting in contrast the earlier and later expressions of such conceptions within the period noted. The most commonly contrasted forms of such expressions of educational opinion have to do with principles and statutes set up for the guidance and control of school practice, the selection and organization of the materials of instruction, and the breadth of educational opportunity. More recently, due principally to the types of changes which have been effected in the buildings themselves, the development of school architecture has been cited as an index of the trend of educational thought in its several aspects. This recognition of the vital relation between school program and school building is evidence of the need for increasing care on the part of those whose responsibility it is to determine the character of the plant in which a community's schools shall be housed. The difficulty has long been that specific knowledge of the best possible means of adapting the school building to the requirements of the particular educational program it should further has not, in general, been available when the necessity for providing a building has arisen. Gradually, through the sympathetic co-operation of a few groups of professional architects and educators, a number of effective principles of school architecture have been formulated, and many features of service and security in school buildings have been standardized. The results of some years' intensive study of the problems of schoolhouse construction in terms of the most advanced ideas of both education and architecture are summarized in a comprehensive volume,[1] planned by an architect and written by him in collaboration with a score of experts, each chosen from the one or the other of these fields because of a distinctive mastery of the particular problem of which his discussion treats.

Expressing the conviction that the school building "of five years ago has passed just as surely as the little red schoolhouse that once stood on the hill," the author explains his attitude toward design in public-school buildings in terms of the tendency of school architecture to respond appropriately to whatever modifications of school procedure the growing intelligence and activities of the community may bring about.

If progress in education is observed from the time when it was dispensed within the small box-like building with its poorly lighted and badly ventilated rooms to its present expanded and still expanding status, as carried on within the modern complex structure completely equipped and embracing all facilities for education, health, and safety, it will be seen that architecture has kept abreast with each succeeding step of the educational program, in which the course of studies has become more and more extended to meet the requirements of the industrial, commercial, and social life of the community.

[1] JOHN J. DONOVAN, *School Architecture.* New York: Macmillan Co., 1921. Pp. xix+724. $20.00.

Notwithstanding this expansion of the curriculum and the consequent complexity of the building and equipment, it is gratifying to note that the architecture of the school has remained simple and direct. This is a hopeful sign. For as the nation advances in its development and maintains its virility, the demands for education will always outstrip the supply. And the burden of taxation so willingly borne as a responsibility to posterity and good citizenship is that much lightened when the merit of the architecture is based on good planning, beauty of form, and dignity of proportion [p. 18].

Moreover, in the planning and construction of the building, administrative and financial economies may be effected by attention to the possibilities of correlation between departments or rooms, the adaptation of special building areas and equipment to a number of different purposes, the grouping of separate schools into a single plant, and the securing of reliable guidance in the work of selecting and fabricating the materials of construction.

As an aid to those who may be interested in making use of the suggestions which the discussions set forth or in profiting by the experiences which have proved the effectiveness of specified plans, the author has assembled the greatest variety of photographs and drawings, including all possible details of design and dimensions. In addition, elaborate description and explanation of recognized practice or of desirable procedure in providing specified features of the school plant are presented in the text. For example, the chapter dealing with the science department of the high school considers, among other subjects, suitable rooms and equipment for use in instruction in physics. The discussion treats of the lecture-room, the laboratory and laboratory tables, storerooms, switchboard, etc., for general courses, as well as special requisites for certain applied courses. Besides explaining the principles which should be taken account of in the location and arrangement of rooms and apparatus, the author presents suggestions concerning the arrangement of seats, the construction and placement of blackboards, the special requirements of illumination, etc. To clarify the discussion, eight photographs and more than a dozen drawings of rooms and equipment in actual use in representative high schools are presented. Again, in the discussion of building costs, detailed lists of the standard requirements for buildings to be used for elementary-school, junior high school, or senior high school purposes are given, the important areas of such buildings are classified, methods of computing costs on various bases explained, and tables presented showing the approximate cost (in cents per cubic foot) of various types of buildings and of specified classes of service systems. There is also included an itemized estimate of the total cost of a proposed high-school building and equipment in a city of twenty thousand people.

Among the other topics relating to school buildings to which chapters are devoted are sites, playgrounds and landscape architecture, vocational schools, provisions for physical education and other special subjects of the curriculum, the assembly, the library, and the cafeteria. The plan of full, detailed expla-

nation, accompanied by numerous illustrations and drawings, is followed throughout the book.

The volume will be of exceptional value to architects, boards of education, and school superintendents in the solution of many of the perplexing problems which arise in connection with the attempt to construct or to remodel a building to suit the specific needs of a community. Where the services of a school architect are not available, such a volume should unquestionably be in the hands of the board or of the superintendent.

Grade norms for standard tests.—From the experience of teachers and supervisors in attempting to measure the results of instruction by means of educational tests, there has developed a feeling of uncertainty concerning the significance and the validity of many of the reputed standards. Lacking the facilities and the opportunity for attesting such norms as are announced for the instrument of measurement which he employs, the individual attempting an interpretation of the scores of a group he has tested can but wonder whether there is any certainty that the situation indicated by the comparison of class scores with published norms really exists. In this situation, reports of results obtained by other teachers employing the same tests with other school children are often reassuring, especially when large numbers of pupils tested in many different schools are involved. Much interest will therefore attach to a recently issued summary[1] of the results of administering several of the commonly used tests in a number of school systems.

The results presented in the bulletin are such as have been voluntarily reported to the Bureau of Educational Research by teachers and supervisors in the field. Since the tests were given to pupils of varying abilities, working under widely differing conditions, and were administered at different periods of the school year, the standards presented should be used only with due allowance for the possible errors of measurement and differences in pupils tested which may exist.

The method of the report is to present in the case of each test (1) the median scores by grades, together with the 25 and 75 percentiles, (2) the number of pupils attaining the indicated scores, and (3), for most of the tests considered, percentile tables derived from the original distribution. With these data as a basis of comparison, the teacher employing one of these tests can readily make the types of comparisons which will indicate the relative progress or skill of the group tested, when measured by the records of large numbers of pupils in many different schools. The tests for which tentative grade norms are presented are Monroe's Standardized Reasoning Tests in

[1] WALTER S. MONROE, *Report of the Division of Educational Tests for 1919–20.* "University of Illinois Bulletin," Vol. XVIII, No. 21. Urbana, Illinois: University of Illinois, 1921. Pp. 64. $0.25.

Arithmetic, Buckingham's Scale for Problems in Arithmetic, Monroe's Diagnostic Tests in Arithmetic, Monroe's Standardized Silent Reading Tests, Charters' Diagnostic Language Test and Language and Grammar Test, Willing's Scale for Measuring Written Composition, Harlan's Test for Information in American History, Sackett's Scale in United States History, Hotz's First Year Algebra Scale, Minnick's Geometry Tests, Holley's Sentence Vocabulary Scale, and Holley's Picture Completion Test for Primary Grades.

In addition, the bulletin contains a chapter each devoted to Monroe's Standardized Reasoning Tests in Arithmetic and Timed Sentence Spelling Tests.

Advanced commercial arithmetic.—High schools which attempt to prepare young people to enter commercial life have frequently suffered the criticism that the graduates of commercial courses are ignorant of even the more elementary principles and processes involved in business transactions. Particularly is there complaint that the schools do not effectively teach the mathematics of business. In explanation of this apparent failure, it is noted that the attempt to provide for all the subjects of instruction which an acceptable commercial curriculum is supposed to contain has, in many schools, resulted in limiting the pupil's training in the specialized mathematics of the field to a somewhat elementary, if not a comparatively brief, course in commercial arithmetic which he usually gets in the first year of high-school work. Where the traditional type of mathematics course obtains in the intermediate grades, the pupil is of necessity left without a knowledge of certain functions which are fundamental to applied business mathematics. In recognition of the need for a more thorough type of training in this phase of commercial instruction, a text[1] is offered which comprises the material the authors have for six years used successfully with fourth-year high-school classes.

With the idea of providing a text for use in general courses in commercial arithmetic, the authors include a wide range of topics, dealing with profits, insurance, taxes, exchange, interest, and pay-roll calculations. The material is distinctly concrete, numerous illustrative examples and exercises being presented in connection with each topic, necessary definitions and explanations being brief and concise in every case. Special care is taken, where possible, to explain and illustrate several recognized methods of procedure. Thus, in the treatment of depreciation, four methods of computation are shown: the straight line method; a fixed rate, computed each year on the original value of the property; a decreasing rate, computed on the original value of the property; a fixed rate, computed on a decreasing value. The more technical and complicated processes—logarithmic applications, weighted averages, practical uses of the progression formulas, and the slide rule—are treated with a

[1] EDWARD I. EDGERTON and WALLACE E. BARTHOLOMEW, *Business Mathematics*. New York: Ronald Press Co., 1921. Pp. vi+305.

view to equipping the individual with all the essential knowledge for accurate and careful calculations when required.

The numerous tables, forms, charts, and formulas, together with lists of abbreviations and symbols used in commercial transactions, make the book serviceable both as a text for school use and as a manual for those already actively engaged in business.

The high-school schedule of recitations.—The steadily increasing size and complexity of public high schools present to the administrative officers of such institutions a continuous problem of organization and adjustment. Under the necessity of keeping staff and equipment in readiness to meet the requirements of ever growing classes and expanding curricula, the high-school principal is driven to a careful analysis of the situation as it exists in his school and to a consideration of the several factors involved in any scheme looking to the effective and economical administration of the educational program for which he is responsible. One of the most difficult of these problems of administration, and one which the principal faces annually, is that of constructing the daily schedule of recitations. An ingenious device which the principal of one large high school has found serviceable in simplifying the task of schedule-making is described in a late number[1] of the "School Efficiency Monographs."

Recognizing the fact that each high-school program must take account of many factors peculiar to the local situation, the author points out certain fundamental considerations that become the basis of all program-making and explains his method of formulating a daily schedule which readily adapts itself to any type of high-school organization and which tends to become permanent with only such readjustments each year as changed conditions and new courses may require.

The plan described employs the "block" method of distributing class sections, a plan which arranges all sections in non-conflicting groups. Assuming that the high-school pupil's program will normally consist of twenty or twenty-five class periods per week, a six-block program is planned, thus allowing at least one free period per day as a means of giving flexibility to the pupil's schedule. In order to avoid possible conflicts, each block is made up of a different group of class periods, so that recitations scheduled in one block cannot conflict with those scheduled in any other block. The class sections are designated by letters, and no section letter is repeated in a given block. The class periods are so arranged within the block as to give an equal distribution of early and late periods of the school day.

Similar specific suggestions are presented with reference to procedure in the assignment of teachers and rooms to recitation sections, equalization of sections, determination of study-rooms, and making the teachers' schedule

[1] MYRON W. RICHARDSON, *Making a High School Program*. Yonkers-on-Hudson, New York: World Book Co., 1921. Pp. 27.

of work. A complete illustrative program, the one in actual use in the Girls' High School of Boston, is presented for reference. The plan is carefully formulated and is described in sufficient detail to enable any high-school principal to make use of it in the task of planning and drafting the program for his own building.

Poetry for high-school pupils.—The aim of a recently published anthology[1] is to present to young readers, ages fifteen to twenty, the principal types of poetry, English and American. Poems of the two nations are intermingled; the standard "classic" poems have been supplemented by attractive but less well known poems; all poems are selected for their intrinsic merits rather than for their literary reputation; notes are restricted to suggestions which will assist directly in the interpretation of the literature itself. As may be anticipated, narrative poems occupy a somewhat larger part of the book than lyrical and reflective poems.

Convenient in shape and size, attractively bound and printed, and containing the most appropriate of classic and modern verse, Professor Alden's book is a distinct contribution as a high-school text.

Spanish texts for high-school classes.—The continuing interest on the part of secondary-school students in the study of Spanish is being met by an active effort among teachers to improve the methods of instruction and to provide a more vital reading content for these courses. The result is a rather rapidly growing list of texts designed for use with high-school classes. Certain of the tendencies with respect to method and material may be indicated by reference to a few of the books recently received.

One volume,[2] designed for use in either class or individual study, is the first of a series of three texts for teaching Spanish which Professor Galeno has written. He has also a set of Pictorial Wall Charts 30 by 40 inches, thirty-five in number, and a Teacher's Manual in which he describes his method of presentation. In the Preface to this first volume we are told that "the author has endeavored to modify the direct method to the extent necessary to make it intelligible and interesting to the self-student with such aid as he may be able to secure, as well as for class and school work." Professor Galeno is "convinced that pictures greatly facilitate the teaching of a foreign language" and that "teaching by presenting the object or the picture is the natural method." His book contains several very useful illustrations, although none of them have Spanish atmosphere. A good example of their practical character is one in which a child is playing with three books while the mother sits com-

[1] RAYMOND MACDONALD ALDEN (ed.), *Poems of the English Race.* New York: Charles Scribner's Sons, 1921. Pp. 410.

[2] OSCAR GALENO, *Galeno Natural Method. Spanish Book One.* New York: Gregg Publishing Co., 1921. Pp. xvii+267.

fortably with four books in one hand and six on one knee, and the father stands before the bookcase with six books in his right hand and ten under his left arm. Since the book is intended for students working alone, the course is written entirely in Spanish with the English translation in parallel columns or interlinear.

The treatment of pronunciation and orthography (40 pages) is the weakest part of the book. We are told that a consonant cannot be pronounced alone, that *o* is pronounced as *o* in "go," that care must be taken not to confound *b* with *v*, that *j* and *g* (before front vowels) have the same sound as *h* in "hope," that *ll* equals "ly" and *ñ* equals "ny," that *r simple* is pronounced as in "rear," *t* as in "table," and *v* as in "vain." A diagram of the organs of speech (p. 4) seems to show that *u* is pronounced in the front of the mouth and that *o*, *i*, *e*, and *a* are each pronounced farther back than the preceding until *a* is pronounced in the throat. It would be interesting to know the source of Mr. Galeno's mistaken idea on this matter since he puts no single vowel in the proper place. His diagram of lip positions (p. 5) is, however, accurate and valuable. In the body of the text a system of phonetic transcription is used, of which the following examples will give an idea: *esto* (áis-toh), *este* (áis-tay), *el* (ail), *caja* (cáh-hah), *techo* (tái-tchoh), *puerta* (pooáir-tah), *leccion* (laik-thee-óhn), *paredes* (pah-rái-days), *papeles* (pah-páy-les), *seis* (sáiees), *siete* (seeái-tay), *once* (óhn-thai).

The treatment of grammar, the conversations, and the exercises are interesting and carefully worked out. Even if one is not in favor of much grammatical discussion in Spanish, one must admit that Professor Galeno has been very successful in handling it. In his hands, or in the hands of a teacher who speaks Spanish fluently, the book should give good results. It is an interesting and thorough piece of work so far as it goes.

A second book[1] consists of about 180 pages of text on the countries of South America. Each section is accompanied by questions or an exercise in which the pupil is asked to write a suggested number of questions and answers. The book is provided with a map and numerous interesting cuts. A brief introduction gives a general glance at South America on the basis of four main divisions: the west coast, the region of the Plata, the Amazon Valley, and the north coast. The book is divided into four corresponding parts, and from two to four chapters are devoted to each republic. The material is largely adapted from bulletins and articles issued by the Pan-American Union. Miss Phipps says in her Preface that such informational matter, free from indirect constructions, lends itself admirably to the direct method, and she hopes that the book may prove especially useful in classes where this method is employed. Informational matter if not relieved by stories or lighter material soon becomes monotonous, and such a book usually meets with greater success if the lessons in it are alternated with some other type of work. Given the plan of the

[1] HELEN PHIPPS, *Páginas sudamericanas*. Yonkers-on-Hudson, New York: World Book Co., 1920. Pp. vi+208.

strictly informational geographical reader, Miss Phipps has as varied material as could be expected. She has, "simply as a concession to the present transitional stage of modern language instruction," included a Spanish-English vocabulary which does not claim to be complete. The text seems to be suitable for third-semester work in high schools, or for outside reading in later semesters.

One text[1] is a well-planned and carefully constructed introduction to the study of commercial Spanish for fifth-term students who have mastered the essentials of Spanish grammar. It does not plunge immediately into business letters, as many texts do, but begins without presupposing a knowledge of commercial matters. It contains fifty lessons. Each lesson has about a page and a half of Spanish text and about one page of exercises consisting of questions on the reading and a passage in English for translation, based on the Spanish. This careful and systematic division into short lessons is of great pedagogical value. The book is divided into four parts. The first and longest devotes thirty-two lessons to commerce in general. In simple and direct language, it gives the student a firm foundation for all future work and has an educational value apart from its practical value. It classifies the industries, defines commerce, devotes three interesting lessons to the history of commerce, and then deals with mercantile legislation, the merchant, corporations, price, credit, credit documents, contracts, insurance, trade-marks, transportation, customs, banks, exchange, the stock exchange, chambers of commerce, post and telegraph, etc. The second part devotes three lessons to accounting. The third part consists of fifteen lessons devoted to commercial correspondence. Each lesson contains three or four letters in Spanish, a questionnaire, and one or two letters to be translated into Spanish. The fourth part contains notes, vocabularies, abbreviations, etc. Mr. Romera-Navarro has succeeded in providing a text which, instead of attempting to make stenographers of our high-school students, gives them a foundation for intelligent work along any line of business.

A more advanced text[2] or manual for those interested in commercial Spanish seems especially suitable for use in fourth- or fifth-term classes in commercial schools and high schools, or in the second year of college. It presupposes a thorough knowledge of the elements of Spanish grammar. The sixty-nine pages of text include an introduction on the general nature of commercial correspondence with South America, about fifty letters of various types (no attempt being made to apply them to any special form of business), exercises consisting of English sentences for translation based on each letter, and some outlines for original letters. There are models for receipts and powers of attorney and, at the end the foreign postal tariff, consular invoices, a table of South American exchange, weights and measures, etc.

C. E. Parmenter

University of Chicago

[1] M. Romera-Navarro, *Manual del comercio*. New York: Henry Holt & Co., 1920. Pp. vi+276.

[2] Julio Mercado, *Manual de correspondencia comercial*. New York: Gregg Publishing Co., 1920. Pp. 91. $0.88.

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GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

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The Arlington School Survey. "Bulletin of the University of Minnesota," Vol. XXIV, No. 28. Minneapolis: University of Minnesota, 1921. Pp. 58.

HOSIC, JAMES FLEMING. *Empirical Studies in Reading.* "Teachers College Contributions to Education," No. 114. New York: Teachers College, Columbia University, 1921. Pp. viii+174.

The Manuale Scholarium. Translated by ROBERT FRANCIS SEYBOLT. Cambridge, Massachusetts: Harvard University Press, 1921. Pp. 122.

Otis Group Intelligence Scale. Manual of Directions for Primary and Advanced Examinations. Yonkers-on-Hudson, New York: World Book Co., 1920 [revised]. Pp. 72.

STOUT, JOHN ELBERT. *The Development of High-School Curricula in the North Central States from 1860 to 1918.* "Supplementary Educational Monographs," Vol. III, No. 3. Chicago: Department of Education, University of Chicago, 1921. Pp. xi+322. $2.00.

THORNDIKE, EDWARD L. *The Teacher's Word Book.* New York: Teachers College, Columbia University, 1921. Pp. vi+134.

WARREN, HOWARD C. *A History of the Association Psychology.* New York: Charles Scribner's Sons, 1921. Pp. ix+328.

WEATHERSBY, WILLIAM HENNINGTON. *A History of Educational Legislation in Mississippi from 1798 to 1860.* "Supplementary Educational Monographs," Vol. III, No. 4. Chicago: Department of Education, University of Chicago, 1921. Pp. xi+204. $2.00.

BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

A Book of Verse from Langland to Kipling. Compiled by J. C. SMITH. London: Oxford University Press, 1921. Pp. 298.

COLBY, CHARLES C. *Source Book for the Economic Geography of North America.* Chicago: University of Chicago Press, 1921. Pp. xi+418. $4.00.

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